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ABSTRACT

Suggestions for the planning and design of playgrounds to meet the needs of children between 6 to 14 years of age living in medium- and high-density residential areas are offered in this document. The first and second chapters briefly focus on the child's right to play and present an overview of the developmental characteristics of children at different ages. In the third chapter seven basic categories of playground activities in the physical, social, creative and intellectual domains are listed and elaborated. In addition, performance criteria for planning and spatial design are specified and the behaviors that play structures generate are briefly described. The fourth chapter provides guidelines for selecting play activities and designing play sites in a manner appropriate to play behavior. The fifth chapter deals with specific design details that enhance the value of play facilities. Design solutions that fit the characteristics and play needs of school-age children are suggested. Four examples of site designs, including construction cost estimates, are provided in the sixth chapter. The seventh and final chapter explores issues related to site management, resident participation, and maintenance. A summary, a list of Canada Mortgage and Housing Corporation resource materials and additional references, and a glossary are included at the end of this advisory document. (Author/RH)

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Play Opportunities for School-Age Children, 6 to 14 Years of Age

Advisory Document

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Société canadienne d'hypothèques et de logement

Honourable Paul Cosgrove
Minister

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Preface

Canada Mortgage and Housing Corporation is publishing a series of advisory design documents to be used in conjunction with *Site Planning Criteria* (NHA 5214) which describes the site planning requirements for housing financed under the National Housing Act.

The advisory design documents are intended to supplement and amplify the information provided in *Site Planning Criteria*. They explain and illustrate more extensively the factors to be considered in planning and designing various aspects of the residential environment. It is hoped this information will assist those involved in the regulation, financing, design and development of housing by identifying alternative solutions that respond more sensitively to individual circumstances.

This publication, *Play Opportunities for School-Age Children, 6-14 years of age* is one such advisory document. It is concerned with family housing over 22 units per hectare in density.

This document has been prepared by staff of Canada Mortgage and Housing Corporation under the direction of Polly Hill, adviser, Children's Environments Advisory Service. The Corporation gratefully acknowledges the assistance of William Mann with the drawings and all others who reviewed drafts.

Comment and suggestions are invited to further develop the material presented and should be addressed to:

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Introduction

For the purpose of this document the term "school-age children" refers to children from 6 to 14 years of age — the period in which they attend elementary and junior high school in Canada.

In this document the discussion of design suggestions for the play needs of school-age children will focus on medium- and high-density residential environments and will not deal with low-density traditional single-family housing.

Residents of comprehensively-designed medium- to high-density family housing developments have stated that the school-age child's play often creates conflicts with other age groups living in the development. This document provides advice which will reduce these conflicts and help meet the needs of this active age group through appropriate design, location and site landscape suggestions.

The advice provided in this document can also be adapted to existing residential areas, infill housing, rehabilitated core developments, neighbourhood improvement areas, community-use school property and community parks.

Municipal planning policies for neighbourhood recreational requirements should be consulted and adhered to, but where they do not exist, this document can serve as a guide for the variety of opportunities that should be available to school-age children. It is hoped that municipalities who do exercise a development control approval process will find this document useful for planning policy regulations.

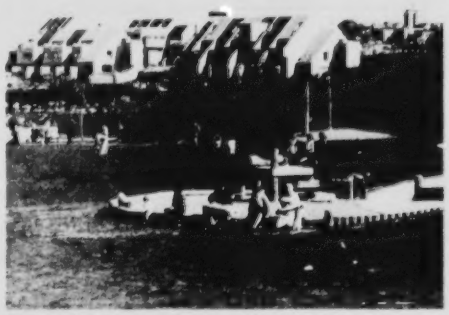
CMHC's publication *Site Planning Criteria* (NHA 5214) states the following requirement under "Children's Play Spaces":

"In comprehensively-planned developments of over 20 family units (two bedrooms or more) appropriately located, designed and landscaped play spaces shall be provided for preschool and school-age children. A minimum of 2.5 m^2 per bedroom (excluding the master bedroom) shall be provided for these purposes. The play area shall be included as part of the Minimum Amenity Areas".

The minimum requirements for children's play spaces as specified in *Site Planning Criteria* is to accommodate play by both preschool and school-age children. Of the minimum 2.5 m^2 per bedroom required, 1 m^2 should be assigned for the preschool play space (See *Play Spaces for Preschoolers*, NHA 5138) and the remaining 1.5 m^2 should be for the facilities exclusively used by school-age children. Since many of the activities of school-age children are enjoyed by the whole family, children of this age are only one of many users of the communal space. These spaces, such as walkways and communal green space, should not be counted as part of the minimum 1.5 m^2 per bedroom required for school-age play. The minimum criteria would apply therefore only to the space that adults are not likely to use such as the space provided for facilities like climbing frames for school-age children.

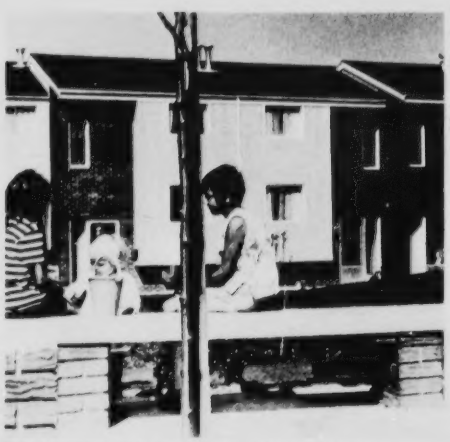
This document recognizes that school-age children use the whole residential site and that, if their needs are recognized and met, their use will be more compatible with that of other age groups.

Photo CMHC



The child's environment can be full of variety, interest and friends of all ages.

Photo CHDC



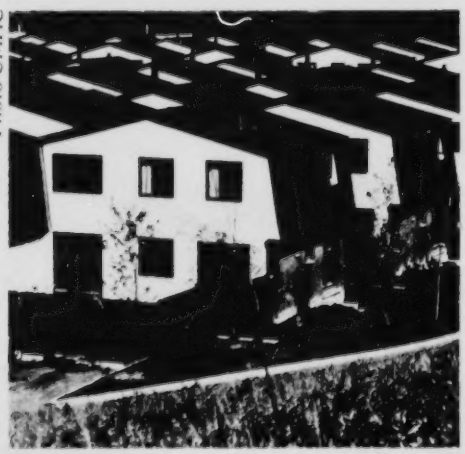
Play opportunities may be safe but boring.

The Child's Right to Play

Photo Roger Jowett

Do our neighbourhoods have too many constraints?

Photo CMHC



The neighbourhood can influence a child's prospects and opportunities.

A good place to bring up children. The characteristics of the neighbourhood — its physical, social, ethnic and cultural make-up — affect the friendship and play patterns of children, especially school-age children from 6 to 14. Although they are more mobile than their younger siblings and less tied to their home, they still depend on adults for most of their transportation. Their territory around the home is defined by where they can get to on a bicycle or on foot.

This "turf" can be full of variety, interest and friends of all ages, or it can be monotonous and lonely, or over-crowded and dangerous. It is the purpose of this chapter to point out principles of good residential planning that provide opportunities for play — a good place to bring up children.

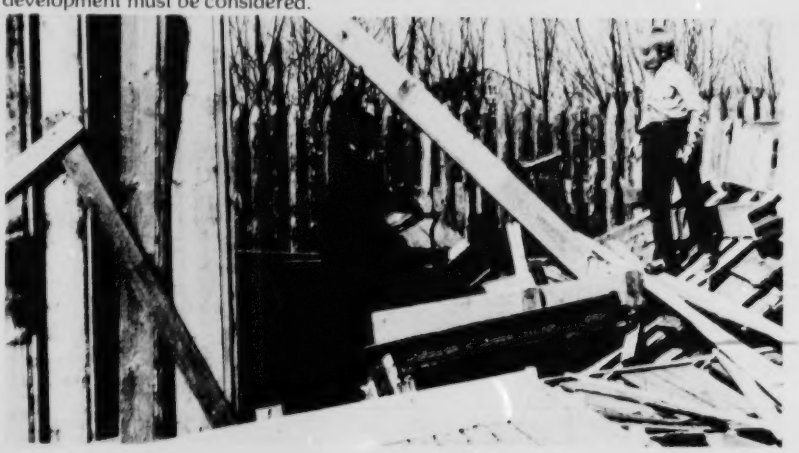
The type of neighbourhood sets its own constraints on children's play. Low-density suburbs with only a few houses per block, with few children and no focal point for neighbourhood activity, can result in isolation for a child, where a crowded older inner-city area may make interaction between all ages mandatory because of their proximity to one another. Play opportunities in the suburbs may be safe but boring, whereas places to play in the city often have more variety but are either dangerous or forbidden. Children somehow adapt. Perhaps the fact that they do adapt, are so flexible, and find places to play whether they are appropriate or not in adult eyes, has enabled us to ignore their needs for appropriately designed space in many of our

residential communities. Most neighbourhoods are largely designed for grown-ups. Children must fit into a world that hardly suits them; only their energy, imagination and perseverance make it possible for them to succeed.

In planning new housing developments and improving old residential areas we cannot ignore our responsibilities to the generations to come. The neighbourhood can influence children's prospects and opportunities. Neighbourhoods with too many built-in constraints may deprive children of their basic rights of childhood; the rights to experience and explore spontaneously, on their own terms, in a safe and interesting environment.

The importance of play in the child's total development must be considered. Play is not the mere passing of time; play is life. It is instinctive, voluntary, spontaneous, natural, exploratory. It is expression. Play combines action and thoughts. It gives satisfaction and a feeling of achievement. Through play the child develops physically, socially, creatively, emotionally and mentally. Play is, therefore, a way for the child to learn to live. It is the responsibility of designers and developers of residential areas to provide for a variety of play experiences that will enable children to develop their full potential as they grow to adulthood.

The importance of play in the child's total development must be considered.



Play combines action and thought.

Characteristics of the Child, 6 to 14 Years of Age

Relationships with peers become more extensive.

Photo CMHC

This age plays everywhere.

As we have stated, the term "school-age children" for purposes of this document refers to children between 6 and 14, the period in which they attend elementary and junior high school. To provide appropriate opportunities for this age group to play, the significant characteristics of the school-age child must be considered before appropriate opportunities for play can be created.

School-age children start to interact with a greater variety of people during their sixth and seventh year. Relationships with peers become more extensive and gradually they move from dependence on their parents to independence. In this transition period school-age children turn from their parents to older brothers and sisters to their peer group for their model of behaviour. The striving for identity, approval by peers and independence from adults are the characteristics that influence their play needs.

School-age children are often over-organized. Despite the structured school day they are great joiners in organized after-school activities — cubs, brownies, etc. They are hustled off by parents to lessons in music, ballet and karate as well as to organized sports with arduous training sessions.

In spite of all this adult intervention during most of their waking day, free play, or unstructured play, for this age is an important source of knowledge, physical exercise, emotional, social and full personality development.

This age plays everywhere; in spaces adults consider both appropriate and inappropriate. Therefore, in developing a residential area, their play needs, their wider range from home, their diversified interests and the play traffic pattern they make between school, sports, play spaces and home must be taken into account.

Size

North America children in this age group have an average range in height from 110 cm to full adult size. Some attain their full size by the age of 12. Their weight ranges from 22 kg to full adult weight. Although growth in size and weight varies, 75 per cent of adult height is attained by the average nine-year-old boy and by the average seven-year-old girl.

Growth in size and weight varies.

Development Pattern

Children develop as whole people and the interaction between the various components of their development — physical, intellectual, creative, emotional and social — is constantly affecting their performance as total human beings. For the purposes of this document, components of their development are discussed separately to identify the type of activities that primarly stimulate growth of the "whole child".

Physical Development

Muscular competence varies greatly with each child, but on the whole the child's potential is underestimated. Gross motor skills, as well as fine motor skills, are constantly being tested, practised and improved. This age group enjoys risks and feats of daring of all

Children enjoy feats of daring and adults often underestimate their skills.

This age seeks approval of the gang rather than adults.

kinds and needs a lot of physical challenge. The school-age child also enjoys activities of skill and strategy and making things of all kinds and degrees of complexity using the small muscles of hands and fingers. The mastery of physical skills has an important effect on the child's self-image. When he is obviously good at something he feels good!

Social Development

This age group seeks approval of "the gang" rather than adults. They tend to engage in social behaviour that seems bizarre to adults, but on close examination, is full of rules and rituals and black and white judgements of what is fair and what is mean. Their allegiance to each other and to their peer leader is fickle but vehement, for the time it lasts. Their fear of "losing face" often colours their judgement and sense of responsibility. Their primitive striving with complex human relations is the key to their future social maturity. If opportunities for social exchange with their peers are not provided in an unstructured tolerant social environment, anti-social behaviour can result.

Research has indicated that the need for peer-group approval and "secret societies" without constant adult interference is so strong at this age, that when the need is frustrated, it results in

a form of alienation from adults. Acts of vandalism and irresponsible behaviour are the labels adults give to gang projects that may start out by being innocent escapades to seek excitement and peer approval.

Developers and residents who want to lower the incidence of anti-social behaviour by this age group should take special note of this important characteristic of child development and the design suggestions that lead to positive solutions to negative behaviour.

Creative Development

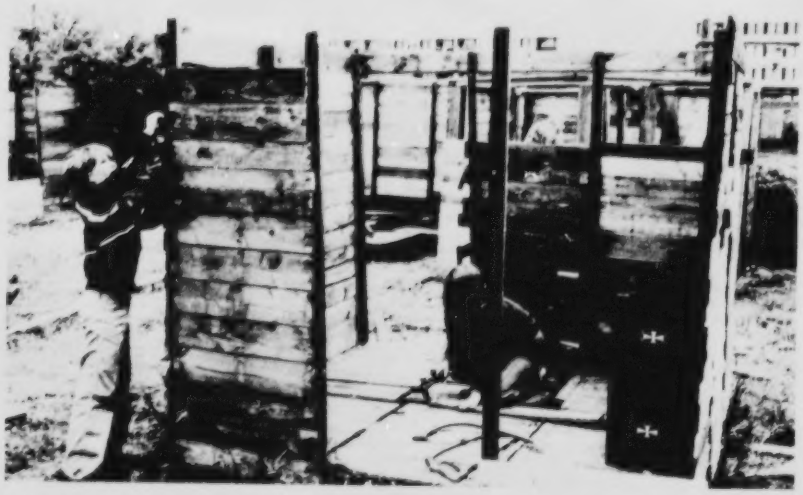
Creating ideas, expressing themselves in words or with their hands, inventing and building are all characteristic of children of this age. The results of their creativity begin to take on more significance to them though they still enjoy the mere process of creating.

This is a crucial period in the child's creative development. Unless it is nurtured by providing ample opportunities and encouragement, many children lose their ability for spontaneous expression and creative problem-solving.

Intellectual Development

Children of this age group are inquisitive and seek opportunities to acquire information, to apply their knowledge

Creating ideas, expressing themselves, in words or with their hands.



Children seek opportunities to acquire information and apply their knowledge.

They develop strong emotional ties between friends of the same sex.

and to explore possible adaptations of their knowledge. They take great satisfaction in a systematic and productive way of thinking about experiences and in relating that knowledge to their ability to function more independently. Their ability to remember the past increases and becomes more important for interpreting and understanding the present.

Emotional Development

Physiological changes throughout these years have emotional consequences. These physiological changes often cause shy, withdrawn, awkward or antagonistic behaviour between the sexes, as well as the development of strong emotional ties between friends of the same sex. Emotions are hidden as they try to sort out what is appropriate for their age, sex or the situation. They are very sensitive to criticism and ridicule, though their behaviour tends to attract more criticism than at any other age. The foundation of their emotional maturity is laid during these years.

Special Qualities

School-age children are unable to exercise caution or anticipate danger, especially when engaged in an engrossing activity. Cars, therefore, still pose a real threat as children now travel to school and recreation centres without accompanying adults.

They are not as home-centred as they were at five but they still prefer playing in their own immediate neighbourhood or on their own street. This is partly due to the spontaneous nature of their play and to the fear of bullying and rival gangs found on more distant school-yards, parks or playgrounds.

As they grow older, children engage in an increasingly wide variety of activities, both spontaneous and organized, alone and in groups.

The sexes split apart during this period and usually engage in different activities. Girls enjoy make-believe and elaborate games of hopscotch and skipping while boys do and are more interested in sports and running games. However boys and girls share common interests which will bring them together without self-consciousness, such as building huts, caring for animals or enjoying a bonfire on an adventure playground. (See "Glossary, Adventure Play-ground"). As they reach puberty, boys and girls begin to spend more time together in all programs and activities.

The most outstanding feature that affects design for children in this age group is the noise they make. Unlike the noise of the preschooler which is less intrusive and abrasive, the noise of school-age children tends to be irritating to adults. Shouting, arguing, fighting, bad language and boisterous laughter is

Cars still pose a real threat as children now travel to school alone.

The sexes usually split apart during this period of development.

Boys' activity patterns are different from girls'.

The most outstanding feature of this age is the noise they make.

Wherever possible, handicapped children should be integrated into play spaces.

characteristic of school-age children. However, the reverse behaviour, such as quiet talk, deep discussion and long periods of concentrated silence can also occur. In physical planning terms, the design, location and buffer space must suit the activity that will occur there and its accompanying behaviour.

It is important to satisfy the needs of children who are mentally or physically handicapped. Traditionally these children have been segregated and over-protected by their families, but contemporary attitudes are changing and the handicapped are being integrated into the community largely due to the Canadian Human Rights Act of 1977. Streets and public facilities are being designed to accommodate wheelchairs and to satisfy the needs of the blind and the deaf. Play spaces for children must also become barrier-free environments whenever possible to encourage handicapped children to enter the mainstream of society and to satisfy their need for play which is the same for all children. Recent changes to building codes and provincial human rights acts now make it mandatory for schools to be accessible to the handicapped. Play opportunities should also be accessible.

User Needs and Categories of Activities

Photo CHDC

Children play everywhere, not just in designated playgrounds.

Photo Arvid Bengtsson

They need more space and a variety of environments.

School-age children's play can be accommodated in a variety of ways, not just in designated playgrounds. Children of this age will go farther from home than five-year-olds to meet their friends and engage in a specific activity.

- They need more space than preschool children and a variety of environments to suit their different activities. The proximity of one activity to another is not as important as it is for the younger age group and in fact, may be counter-productive (e.g., placing a basketball net near a sand box).

- It should be kept in mind that their bodies are bigger than preschoolers' and that they run faster and farther, climb higher, talk more loudly and shout more. Altogether, they need more space for their physical group activity and more of a buffer from other age groups with different needs.

- As much as 75 per cent of this age group's free time is spent in a large number of activities other than group physical play. The spaces needed vary with the activity and the behaviour the activity generates.

- The whole family will participate in some of these activities at certain times, sometimes to help their children to perfect their skills (e.g., baseball, hockey, kite flying) or often just for companionship and family fun.

- The addition of play leaders to playgrounds can extend the play value of some activities if the leaders act as a catalyst or coach or introduce new materials, ideas and some controls that will allow for more experimentation, risk and challenge than can be had in an unsupervised situation.

In this publication the description of various activities is grouped under seven general categories related to the behaviour the activities generate. However, this is not intended as a finite list as children are masters at finding new and original uses for space and facilities never dreamed of by the designer.

For each of these categories of play, characteristics of the children's behaviour are described, where they have design implications.

Sports facilities, large-scale recreation centres and school facilities are not discussed.

The whole family will participate in some activities.

A leader can extend the play value of some activities.

Category 1.
Physical Activities
Games with balls or aerial objects

Types of Activity

There are many different types of games where a ball or similar object is thrown, kicked or hit at a variety of speeds and heights. Examples of such games are:

- basketball
- softball
- football
- soccer
- volleyball
- tennis
- medicine ball
- net games of all types
- frisbee
- catch
- snowball throwing
- kite or model plane flying
- any spontaneous ball games

Description of Behaviour Generated

- Six to 14 year olds will set up informal games of this type with whatever players, equipment and space they have available. They enjoy perfecting their skills and seek companionship. But to hear them, one wonders if arguing isn't the object of the game. No matter how informal the game there are always rules to be obeyed and argued over. Noise is a major component of this type of play.
- Parents enjoy doing many of these activities with their children and they would use the same types of spaces for informal adult activities.

Performance Criteria for Planning and Spatial Design

- Space for these types of hitting, kicking and throwing activities must be large enough to allow unimpeded running for 20 to 40 m depending on the game.
- The space provided must allow a ball to travel at least 10 m without breaking or disturbing anything; or barriers must be provided to control or impede its distance.
- Ball-play areas should be located at least 10 m from private outdoor living areas so that the private area is not subjected to the random running and shouting of players.
- The surface for these types of activity should be good for running — firm, but with some resilience and not abrasive in case falls occur.
- Some ball games such as basketball

require a hard surface for bouncing; however, the practice net can be placed on sod or a similar soft surface.

- To accommodate a wide variety of ball games the space may be irregular in shape but must be large (approximately half a regulation football field — 250 m^2). However, a selection of games with balls or aerial objects can be accommodated on a much smaller space — 150 m^2. When less space is used, plants or other control systems for flying objects prevent conflicts with other users' needs.

- Play areas adjacent to streets and parking areas must have barriers to prevent balls from rolling away.

- Some seating at the edge of ball-playing areas should be provided for watching, waiting, resting and social gathering.

Barriers are needed to prevent the ball from rolling or flying out of small spaces.

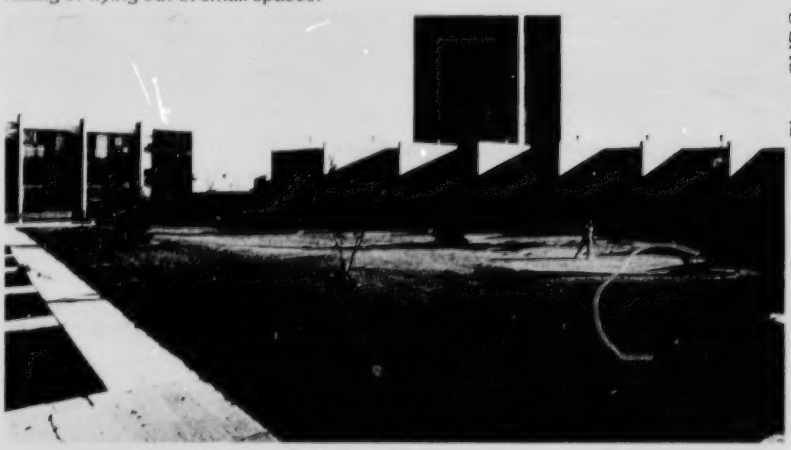


Photo CHDC

Space for ball games can be irregular in shape but must be fairly large.

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Paved surfaces are needed for some games.

Category 2. Physical Activities

Ground-Related Games Using the Whole Body

Types of Activity

This grouping involves games where the ground is used to jump, run, hide, roll, slide or push things. Examples of such games are:

- skiing
- free skating
- skate boarding
- tobogganing
- ice hockey
- ball or street hockey
- roller-skating
- bicycling
- Red Rover
- go-carting
- tag
- TV tag
- hide-and-seek
- red light-green light
- pretend games such as cops and robbers, spacemen, etc.

Description of Behaviour Generated

- Children on their own will quickly learn the "street" games of their neighbourhood. For many of them no special area is needed. They will use pedestrian walkways, sidewalks, streets, parking lots, open spaces and vacant lots, and will look for special surfaces and changes of level for games that need them.

Performance Criteria for Planning and Spatial Design

- The whole site plan should take into account this type of spontaneous play to accommodate these activities properly.
- A clear definition of communal space and private space should be made to deter children from invading private areas while racing around.
- Children should be able to move freely about the site without being endangered by traffic and interfering as little as possible with the needs of others.

- Sturdy plants should be selected and located to anticipate children's play patterns.
- Changes in level and natural topography should be designed to accommodate children's use wherever possible.
- Some hard surfaces could be specifically designed to accommodate these play activities. This is the most effective deterrent to the use of streets and parking lots.
- Some of these play activities may be accommodated in streets or surplus parking areas only if specific design features have been provided to reduce the volume and speed of traffic or temporary barriers are used to protect these areas for safe play during certain times.
- Some seating at the edge of a hard-surface playing area should be provided for watching, waiting, resting and social gatherings.

Category 3. Physical Activities

Strategy Games Requiring Smaller Spaces

Types of Activity

These games involve finer muscle control and strategy:

- ping-pong
- box hockey
- shuffleboard
- horseshoes
- croquet
- tetherball
- lawn bowling
- clock golf
- marbles
- jacks
- skipping
- hopscotch
- "secret" games
- sidewalk games of all kinds

Description of Behaviour Generated

- School-age children enjoy strategy games and competition on a one-to-one basis. The older half of the age group can become very proficient at these games, playing them for hours.
- Many of these games are enjoyed by the whole family.

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Risk develops competence and self-confidence.

Performance Criteria for Planning and Spatial Design

- Spaces large enough for the game or games to be accommodated. Approximately 1 to 3 m are needed for games taking up a small amount of space such as jacks or skipping.
- Because the behaviour generated by this category of games is quieter and more controlled, small spaces of land closer to the dwellings can be used.
- Wind shields are needed for games like ping-pong.
- Flat areas are needed for most games mentioned.
- Surfaces can be soft for some games, e.g., croquet or ping-pong; but for others such as hopscotch and box hockey, they need to be hard.
- Some secure storage for the loose equipment required in these games is needed.

Category 4. Physical Activities

Activities of Risk, Challenge, Muscular Control, Dexterity

Types of Activity

The following are some of the challenging activities that develop muscular control, dexterity and self-confidence:

- stretching
- balancing
- swinging
- jumping
- gymnastics
- stunts on high fences, etc.
- taunting authority by climbing on roofs, forbidden areas
- inventing games of risk, daring each other
- roaming around looking for excitement

Description of Behaviour Generated

- Children are intrigued by climbing, risk-taking and testing their own abilities. Many things present a challenge in their environment, not just pieces of play equipment. Dramatic play often takes place on natural or man-made climbing structures. Excitement is often found in the forbidden by daring each other to defy authority and safety rules.

- Parents often want to control activities of six-to-ten-year-olds, however, children will create challenges for themselves without being supervised if parents intervene unduly and do not see that opportunities for challenge are provided with a margin of safety.

- Climbing equipment requiring physical dexterity can be higher and more challenging in designated playgrounds with a leader, such as an adventure playground. Leaders can test the safety of structures and prevent bullying, or the pressure of children daring each other beyond their capabilities.

Performance Criteria for Planning and Spatial Design

- To provide a space that can hold large-scale equipment necessitates sufficient space around the equipment to prevent crowding or to allow the children to mount the structures without crossing the path of sliding or jumping children.

- Low barriers are one way of directing other types of play traffic away from equipment.

- Linked equipment must not have play going on underneath it.

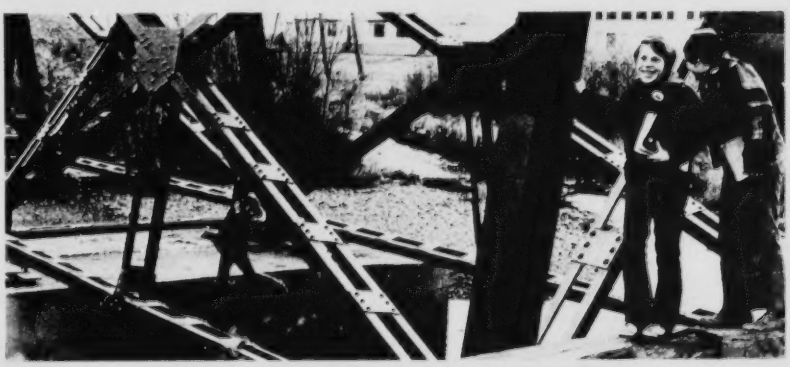
- Structures with movable parts such as swings should be spaced so that children do not collide with the moving parts.

- Equipment must be free of splinters or protruding sharp or dangerous pieces.

- Containers or edging for surface impact material such as sand must be sufficiently distant from equipment so as not to be in the path of a jumping or falling child.

- The impact surface under play structures must be soft.

- Equipment must not involve lining up and waiting for turns on precarious perches such as those provided for high single-person slides.



Inventing games of risk and daring each other is typical of this age and may involve real danger.

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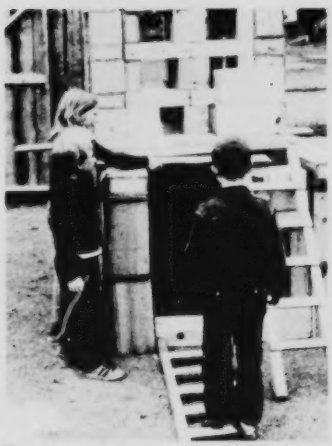
Photo Harbourfront



Co-operating on a project develops social skills.

Elaborate games of house are practice in socializing.

Category 5. Social Activities

Activities Performed with Others

Types of Activity

These games involve communicating and playing together:

- dramatic play
- playing house
- spacemen
- talking together
- telling jokes and stories
- gossiping
- laughing
- sharing responsibilities
- playing with and caring for animals
- giving and taking
- music groups
- dancing
- going to parties
- eating together
- doing "nothing" together
- helping each other

Description of Behaviour Generated

- Children of this age socialize while doing other activities: playing physical games, creating things, playing make-believe games, exploring and playing quiet games. They also do a lot of just plain talking — relating experiences or feelings or just "goofing off" in their own terms. Opportunities for unstructured activities that bring children together to do as they wish, without adult intervention, helps them to learn about themselves and their peers, and develop self-confidence. Some children of this age relate better to animals than to their peers or adults. The animal's dependence helps build responsibility, generosity and a feeling of competence.

- Parents often have to provide back-up care of animals for their children of this age group.

- Many activities of a social nature are done with relatives and other adults — family meals, family chats, family outings such as camping, country fairs, picnics and visiting adult friends and relatives.

- Play leaders' roles in social activities are mostly as facilitators; however, their presence makes it possible to introduce a wider variety of activities to a playground including the care of animals.

Performance Criteria for Planning and Spatial Design

- Structures for social play should be separated from physical play facilities, i.e. open field or climbing equipment, because random running, jumping and climbing activities are often disruptive to quieter social activities such as playing house or school.

- Playhouses, treehouses and other appropriately enclosed places for social play should be provided to encourage dramatic play and social interaction of the younger set, children who are six to ten years of age.

- Social activity areas should be as multipurpose and adaptable as possible, preferably with loose material that can be adapted to imaginative uses such as the making of walls, furniture, etc.

- Hard surfaces and open green areas can be made more flexible for social gatherings such as dancing and picnics by providing electrical outlets for sound equipment or lights for special occasions for the older children in this age group.

- Space for waiting one's turn or just for observing should be provided around group games, table games or strategy games to encourage social interaction.

- Gathering places which are covered or sheltered and provided with benches or alternate seating can encourage social interchange. Landscape features such as hedging can be used to create a suitably sheltered enclosure.

Category 6. Creative Activities

Activities of Self-Expression

Types of Activity

These games involve creating events, ideas or objects:

- acting imaginary or real characters
- making up plays
- dancing
- singing
- playing instruments
- testing ideas
- experimenting
- creating ideas, word patterns
- creating things with blocks, sand, clay, plasticine, wood or other materials

All ages love things that respond, like damp sand.

- building huts or climbing equipment
- designing crafts
- exploring nature, rearranging nature (damming streams), playing with found objects
- organizing other children or objects

Description of Behaviour Generated

- Children of this age love things they can move and change and experimenting with materials of all kinds. They will work on projects for long stretches of time. Sometimes they like working alone, when painting or writing poetry. At other times they prefer group projects like building huts, treehouses, making up plays or dressing up, playing with dolls or making dolls' clothes and dolls' furniture, with friends rather than alone.

- Parents will often help children master skills in the use of the more complicated art materials — oil paints, wood-working tools, musical instruments.

- Parents often serve as an uncritical audience for improvised plays, skits, acrobatic feats and art works of all kinds.

- A wider variety of activities in this category can be introduced to children if there is a leader to take care of the materials and to control their use or abuse to some extent. A leader is necessary for those creative activities that may be dangerous such as hut building with real tools and nails or experimenting with fire or combustible material.

- When indoor space is used, children of this age do not have the maturity or leadership ability to handle the responsibility of care, maintenance and safety needed to control groups of their peers inside a building without some type of supervision or adult control.

Performance Criteria for Planning and Spatial Design

- A natural or man-made area should be provided featuring trees, shrubs, grass, sand for moulding, water for mixing with sand, or water that will form into streams or basins for damming and floating projects by the children.

- Appropriate surfaces for creative activities are needed, i.e. walls, tables with places to sit while working at some of the activities and adequate disposal facilities.

- Storage area should be available for loose material such as large blocks and boards. (See *Creative Playground Information Kit 1*, NHA 5104). Storage is also needed for arts and crafts materials which should be locked away when not being used under supervision.

- Indoor space should be available for some group creative activities. Space should be approximately the size of a small classroom with washable floors and walls for easy maintenance. Storage space should be provided for a wide variety of items. Storage space that can accommodate all the children's equipment also increases the use of an indoor facility by other age groups.

- Indoor space used in group activities for children 6 to 14 should be easy to supervise in or outside of the room, and should be capable of being locked when a leader or play worker is not present.

- Toilets provided in indoor space should be readily accessible to the outdoors as well when the space is adjacent to outdoor activity areas.

- An adventure playground provides opportunities for all creative activities for this age group as well as physical, social and intellectual activities. (See "Design Details, Adventure Playgrounds".)

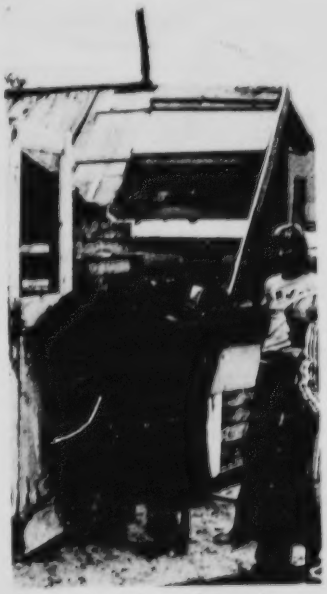
Category 7. Intellectual Activities

Activities that Include a Sense of Inquiry

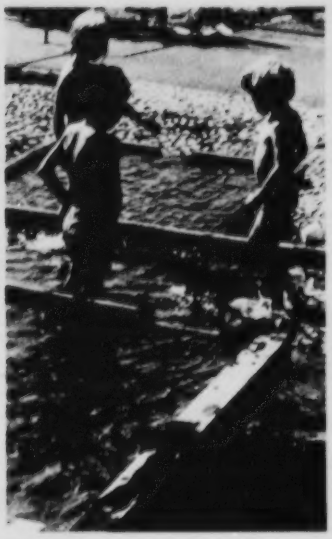
Types of Activity

For this age, learning by doing activates the mind and provides experiences for future thought processes. Examples of such activities are:

- exploring the environment
- learning about the infinite variety in nature through observation and close examination
- recognizing cause and effect by experimenting with objects
- problem solving
- recognizing connections and patterns
- listening to others
- collecting things
- making complicated objects requiring a pattern
- games of memory or strategy
- problem-solving games like chess
- scientific experiments
- reading



The leader helps with a tricky construction problem on an adventure playground.



Figuring out the water flow.

Description of Behaviour Generated

- Children's natural curiosity will lead them on to explore, to form opinions and to seek further information. They are often stimulated by an older sibling or an especially inquisitive friend. They enjoy collecting things with a friend or fellow club member. Games like chess, Monopoly, Password and card games of all types are popular with this age. Listening, talking, figuring things out through interaction with their peers and adult friends are common intellectual activities.

- This age group learns a great deal informally when they are watching, listening, talking and discussing, as well as when they are performing tasks.

- Parents with interests or hobbies often help develop the same interest in their children and they enjoy passing on their knowledge to them.

- Parents or leaders can introduce children to the city, to museums and to cultural history, all of which enhances their play. There are endless opportunities to extend knowledge through play.

Performance Criteria for Planning and Spatial Design

- Where possible, natural features should be preserved and managed to allow for play in and exploration of the natural environment. Man-made landscapes also can often re-create features for nature study. Shrubs, long grass and wild flowers attract a variety of insects and small animal life for examination.

- Some shelter is needed in cold and bad weather for sedentary activities — skill games, construction of a radio and scientific gadgets, etc. A well-stocked play centre adjacent to an outdoor activity area often serves a double purpose, providing space for intellectual and creative activities as well as a headquarters for social gatherings.

- Benches and tables should be provided outside to encourage conversation and table games with their inevitable intellectual and social spin-offs.

- Intellectual activities can be combined with some physical, social and creative activities.

Photo The Citizen

Following a pattern and making it come out right.

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The Selection of Play Activities; Space and Location Requirements

Photo CHDC

Children are principal users of the outdoors.

As described in the previous chapter, there are a variety of types of play activities important to the school-age child that require different sorts of physical spaces and locations. Therefore, rather than referring to "a play area", this chapter will discuss the provision of play opportunities in the residential environment. It will describe the main factors that affect the selection of types of activities, design of the space and the location relevant to the behaviour the activity generates.

A major consideration in residential planning is that school-age children are the principal users of communal areas. They play everywhere, not just in designated playgrounds and will frequently "borrow" areas whose primary function is not for play, such as streets, communal walkways, natural areas or communal green space. By recognizing this fact in the planning and design of the total site, the communal spaces of the housing environment can be developed to facilitate and support this shared use. When the uses are incompatible, such as using streets for play, alternatives can be provided to minimize the conflict.

The extent, variety and amount of the play opportunities to be provided in a specific housing development should be determined on the basis of the size of the housing development (number of units and density per hectare) and the proximity of the site to neighbourhood facilities.

Site Planning Criteria stipulates a requirement for children's play spaces — "a minimum of 2.5 m^2 per bedroom (excluding the master bedroom) shall be provided for these purposes". This standard has been set on the assumption

of allocating 1 m^2 for preschoolers' play spaces and 1.5 m^2 for school-age children's space. The requirement of 1.5 m^2 for the school-age child is only to be applied to those spaces that are designed and equipped for the use of school-age children. It is *not* intended that areas which may be used by school-age children and other groups be considered part of the minimum requirement for children's play space. (These communal areas include the walkway system and large open areas for casual games and sports.) Shared use, therefore, would be over and above the minimum requirement.

In some developments it may not be necessary or feasible to provide opportunities for all seven categories of play activities described in Chapter 3. The goal is, however, to provide a variety and a mix of categories that will meet the needs of the whole child not, for example, just his physical needs.

The challenge is to select the mix and variety within a realistic knowledge of space and location requirements. All this has to be fitted into the restraints imposed by the scale and cost of the development itself, or the neighbourhood to be improved.

Site Development with Play Included

When a family housing site is planned, the location of places to play should be considered. The layout for roads, the grouping of dwelling units, the designation of private and communal amenity areas, parking and the proper siting of specific play opportunities should all be included.

If this were indeed the rule rather than the exception, many of our worries would be over. However, the common practice is to leave the allocation of play space to the end, relegating it to land not suitable for any other purpose. This practice is short-sighted and results in long-term waste. It also results in inadequate play space, unsuitably located and not used by children.

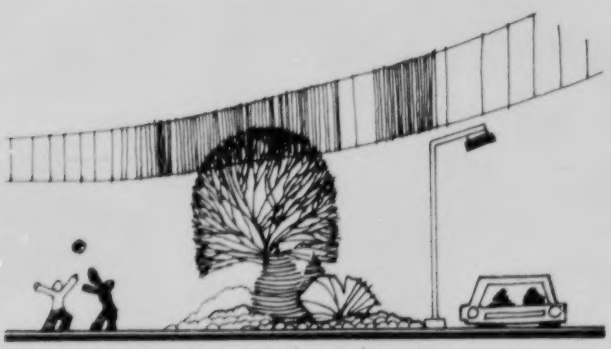
When the child is kept in mind from the beginning, the play space relationship to other communal spaces can be controlled.

Location of Play Opportunities in New Neighbourhoods

School-age children have a greater range from home than the preschool group, but it is nevertheless still limited depending on the nature of the activity. For example, school-age children may walk over 2 km to school or to an organized hockey practice, an adventure playground or piano lessons. However, a distance of approximately 400 m is the maximum they will walk for more unstructured, unorganized activities.

When participating in spontaneously arranged games, like hopscotch, softball or ground hockey, or just meeting friends, a school-age child's range from home is much less than 400 m, usually ranging from 10 m to 200 m, depending on the type of activity.

The proper location of the areas for play opportunities will ensure their frequent use. In selecting an appropriate location, it is important to consider the relationship of the play activities to other components of the site design, such as roads, parking areas, walkways, dwelling units and other communal facilities.



Buffering between play area and street lowers risk of accident.

Guard rails and no parking signs are effective safety precautions for a playground gate.

Roads and parking areas: Vehicular traffic and the play activities of school-age children are not compatible. Areas for specific play opportunities should not be located adjacent to roads or parking areas. Where there may be no alternative, such as in a small project, special design features must be provided to create a barrier between the play area and road or parking area. Streets are usually used by children for play because their hard surface is the only large enough area suitable for hard-top games (e.g., street hockey, broom-ball, etc.). The provision of an adequate hard-surface play area elsewhere on the site is the most effective deterrent to this dangerous use of roads and parking areas.

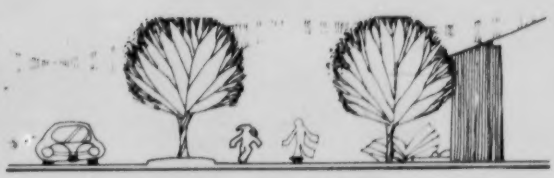
Through traffic routes in or near play areas should be avoided through the design of the street system and parking area. (See "Design Details, Roads and Parking Areas".)

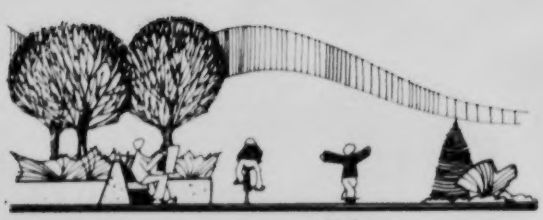
Walkways: A major function of walkways in family housing is to provide a safe pedestrian route and to keep people, especially children, off the roads and parking areas. The walkway system should be carefully planned to connect the dwelling units to play areas as well as to routes to local schools, community centres and parks.

Children of this age also use the walkway system for a variety of play activities such as hopscotch, skipping, skate boarding, bicycling or meeting friends. The proper design of walkways can accommodate and encourage this multiple use. Widening the walkway system, even at selected points, can provide places for hopscotch, etc. as well as a sitting area while not impeding other pedestrian traffic and light wheel traffic. (See "Design Details, Walkways".)

Dwelling units: Much of the group activity of school-age children produces noisy, boisterous and random behaviour that should not be carried on adjacent to individual dwelling units and outdoor living areas. However, strategy games and many social, creative and intellectual activities are quiet and can be accommodated in small communal areas near the unit and outdoor living areas. The dwelling units should be grouped to allow for these types of small open spaces providing opportunities for play at regular intervals throughout the site.

A separation strip between road and sidewalk protects pedestrians and provides a buffer for incidental play.

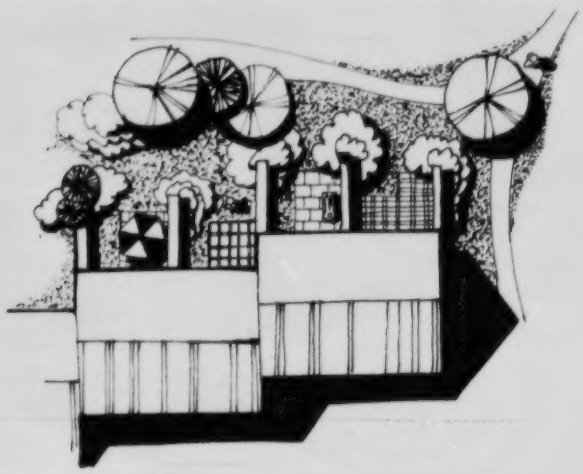




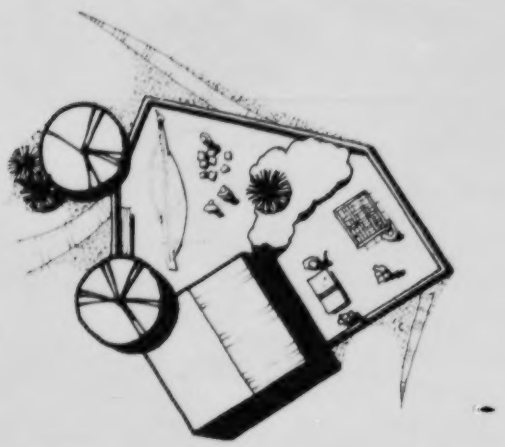
Widening walkways encourages multiple use.

More active play requires a distinct buffer area.

Ping-pong and other strategy games of a contained nature can be close to units.



Outdoor living areas should be clearly defined by plants to prevent the intrusion of play.



School-age play can be placed near a preschool area as long as there is a barrier.

Outdoor living areas should be clearly defined by plants, fencing, change of level, etc., to prevent the play of school-age children from intruding into these private areas. Where more active group play is involved, a buffer area of 6 to 10 m should be provided for dwelling units and outdoor living areas to minimize disturbance by noise or "overflow" play. Similarly, some climbing and physically challenging equipment can be placed near units or private gardens if there is a buffer space of at least 6 to 10 m.

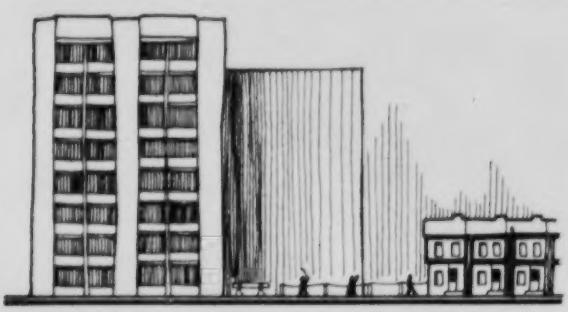
Other communal facilities: Opportunities for school-age children's play can often be increased by the close proximity of their play spaces to other types of communal uses, especially indoor facilities, e.g., community centre, school, day-care centre.

School-age activities can be placed near a preschool play space provided there is a barrier or some protection to prevent the more aggressive play of older children from interfering with, or dominating the preschool area.

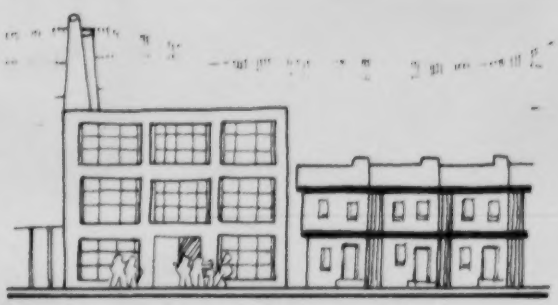
Children are fascinated with the play opportunities offered by natural environments such as wood lots, meadows, streams and ponds and these types of areas should be retained within easy access of the dwelling units whenever possible and their use by children encouraged. (See "Design Details, Natural Areas for Play".)

Location of Play Opportunities in Existing Neighbourhoods

In existing neighbourhoods, where modifications are being considered to improve the play opportunities for school-age children, it is more often a question of doing the best one can to accommodate the principles described in this chapter within the constraints of the existing arrangement. If existing parks are unused and dangerous, it may be because of the undesirable characters they attract. Increasing the positive use will decrease the misuse of an area as people attract more people and children attract more children. If a slide, swing and seesaw fail to attract children, the children should not be blamed; blame instead the monotonous character and the low appeal of the play opportunities provided. A whole reassessment of community needs and children's activity patterns needs to be done before improvements are made. In other words, painting the seesaw does



A commercial parking lot can be used for play during weekends and holidays — temporary barriers keep cars out.



Land used for other purposes can be recycled; for example, an old factory can become a recreation centre.

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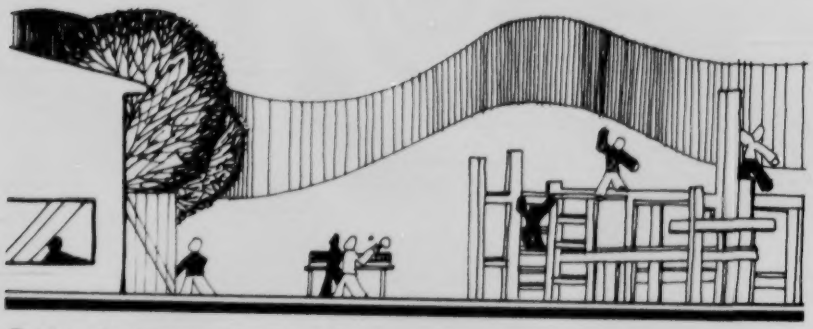
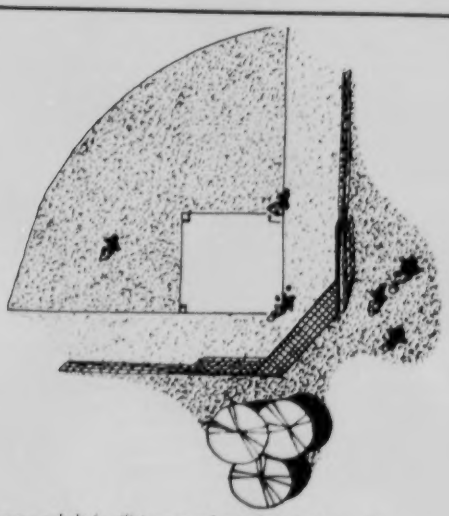
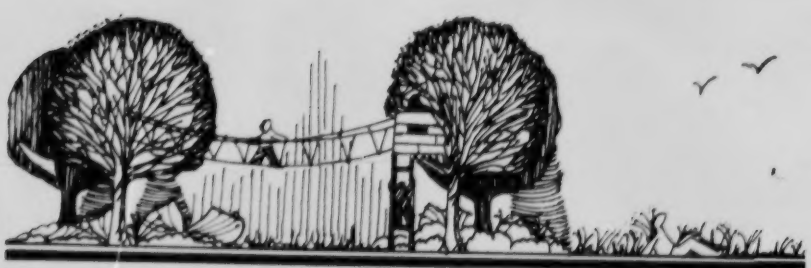


Outdoor play areas near indoor play areas increase the use of both.



Some adult facilities need a safety barrier if a children's playground is nearby.



Natural areas with, perhaps, the addition of some play equipment fascinates children.

not improve its play value or attract more children.

In existing inner-city areas where the traffic tends to be greater, it is even more imperative that stimulating play opportunities be provided to attract children away from the street. Land used for other purposes may need to be recycled for play use. Land available may be far from ideal as far as location and relationships to adjacent site uses are concerned and special design solutions will be necessary to make them work well.

In existing neighbourhoods where space does not allow an alternative to street or parking lot play, the priority given to cars may need to be changed on designated streets, either at certain times of day or permanently. Obviously such changes are a municipal responsibility, but community groups and neighbourhood improvement committees should consider recycling streets and imaginative changes of priority uses and make appropriate representation to the authorities. The careful retrofitting needed to improve an existing neighbourhood will require well-informed citizens to convince municipal authorities of their point of view.

Municipal authorities need to examine all possible alternatives when considering infill housing or city core development.

Selecting Combinations of Play Opportunities for a Play Space

Before selecting the type of space and location for the various activities, it is important to see which types of activities combine well together and which do not.

The compatibility of the seven categories of activities we have identified as typical of children in this 6-14 year age range will depend on the behaviour the activity generates.

An important factor to be kept in mind when determining the compatibility of activities is the difference between dramatic play and projective play.

In dramatic play, the child is the player. He uses his whole body in an activity, sport or an imaginary role. Dramatic play is different in kind and spatial need from projective play. Projective play occurs when the child's imagination turns the twig on the sand castle into

Categories of activities identified are:
1. PHYSICAL ACTIVITIES Games with ball or aerial objects
2. PHYSICAL ACTIVITIES Ground related games using the whole body
3. PHYSICAL ACTIVITIES Strategy games requiring smaller spaces
4. PHYSICAL ACTIVITIES Activities of risk, challenge, muscular control
5. SOCIAL ACTIVITIES Activities performed with others
6. CREATIVE ACTIVITIES Activities of self expression
7. INTELLECTUAL ACTIVITIES Activities that include a sense of inquiry

Temporarily blocking off the street gives priority to children.

Land available may be far from ideal. It helps to provide a buffer or plants between play space and adjacent buildings.

Photo CMHC

Dramatic play, where the child himself is the acrobat.

Projective play, where the twig is the Indian shooting the rapids.

the queen. She herself is not the queen. The chessmen are the warriors, not the children. Ideas that flow through the paintbrush are projected onto the paper.

When combining activities, projective play needs protection from dramatic play.

Projective play can be protected by barriers, buffers, space, or differentiating levels, e.g., a table forms a safety island for a chess game, preventing the pieces from being kicked around and lost.

Physical activities also need some protection from each other. A flying baseball should not be able to hit children on the climbing structure, or others playing ground hockey. Children playing ping-pong don't want to chase their ball past a moving swing or jumping Tarzan.

Social, **creative** and **intellectual** activities blend together, and interrelate well, but they do need protection from all physical activities.

Certain creative and intellectual activities need protection from one another. For example, a control buffer of some type around a sand and water play area will prevent children who are acting in a play or playing spacemen (dramatic play), from trampling intricate sandcastles which have been patiently constructed (projective play).

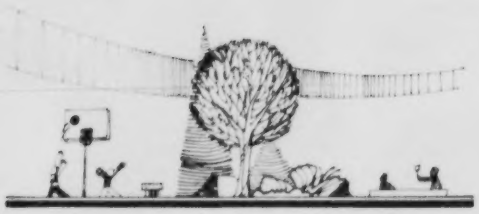
Combining all seven Categories of Activities in one Play space

Comprehensive playground

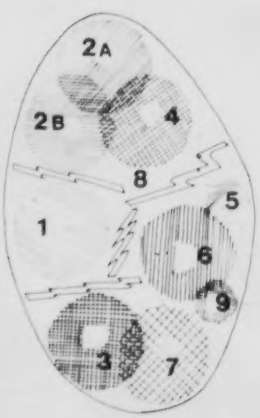
Different types of play selected from all these categories of activities can be contained in one area, often called a comprehensive playground (see "Glossary"). These playgrounds can be created if there is enough space (approximately 1000 m^2) on the site or in an existing neighbourhood. The area needs to be big enough to allow grouping of compatible activities and buffer space between incompatible activities.

Adventure playground

Another type of playground that can combine all categories of activities is an adventure playground (see "Glossary"). Because of the noise generated (similar to that on a construction site),



Projective play in the sandbox needs protection from dramatic play which uses the whole body.



Comprehensive Playground

1 Physical: ball games (open spaces)
2A Physical: ground-related (mound, run-out space into edge of open space, seasonal play)
2B Physical: ground-related (paved)
3 Physical: strategy games
4 Physical: risk, challenge, dexterity
5 Social
6 Creative
7 Intellectual
8 Barrier, buffer
9 Storage of loose material

Note: Interlocking circles imply a compatibility and an advantage of free flow between them. Barriers indicate incompatibilities.

adventure playgrounds must be located away from dwelling units and outdoor private amenity areas, sufficiently far to reduce sound and the annoyance factor of large numbers of children playing at one time. Adventure playgrounds also must provide a visual barrier because of the unsightly nature of the activities carried on there. (See *Adventure Playground Information Kit 2*, NHA 5105).

To be economically viable, adventure playgrounds need to have a large number of children participating because they must have paid leadership, an indoor facility and a high fence to prevent access to the area when it is not supervised.

In selecting an adventure playground as a type of play opportunity for school-age children, one can be assured of success if the location, design and economic criteria are met. Children of this age group and even older teens relate very positively to this concept. They make the playground their own, creating whole shanty towns with elaborate self-imposed "municipal" laws. This activity is a contrast to the bored, negative behaviour that often plagues large housing developments and existing neighbourhoods.

Developers of large-scale projects can often arrange with a municipality to locate adventure playgrounds at the site development stage, so that they serve the development as well as the neighbourhood. The municipality will then manage the project. Existing neighbourhoods may find recycled land that meets all the criteria for adventure playgrounds.

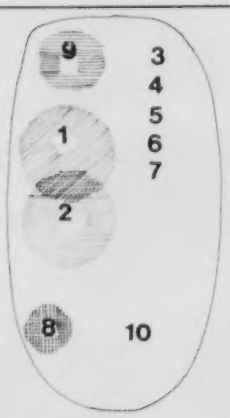
Selecting Activities for Several Small Spaces in one Project

- When play areas in a housing project are small, it is recommended that clusters of compatible activities be accommodated in different locations. In this way, separation between incompatible activities can be achieved, and still give a variety of choices for full family enjoyment on the total site.

- To be an effective play space, and to attract children, the play space must provide for more than one category of activity. The reason for this is that active physical play such as that which takes place on a climbing structure is often of short duration.

Adventure Playground

1 Physical: ball games
2 Physical: ground-related games
3 Physical: strategy games
4 Physical: risk, challenge
5 Social
6 Creative
7 Intellectual
8 Storage pile for scraps
9 Indoor area
10 Truck entrance



Note: The circles around 1, 2, 8 and 9 indicate that only they need special definition in adventure playgrounds whereas all other activities happen as the children arrange and rearrange them — only the open space, truck entrance, storage pile and indoor play area have a fixed location.

Children are attracted to an area that also provides opportunities for other types of play of a more concentrated or creative nature, a place that responds to their changing moods and energy levels.

Examples

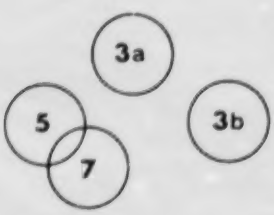
A place for informal small-scale physical activities can be provided on a communal green area if plants are restricted to the periphery of the open space. The addition of some benches with backs around the edge adds to its use and provides a place for social activities. Also, if mounding is used to buffer housing units the mound can be used to accommodate ground-related play such as sliding. (See "Design Details, Mounds").

If the space available is very limited and located close to housing units, the space should provide more passive play opportunities. Strategy games such as tetherball can be included with a separate buffer containing a playhouse and tables for quiet games. Seating could be provided to encourage socializing away from the units. The play area should include an extra buffer in the form of plants to shield the units.

Another combination of physical activities can be that of strategy games (clock golf) and risk taking (climbing structure). If there is room, sand and water play can be separated by plants or low fencing and still be in close proximity to one another thus increasing the play value of the area.

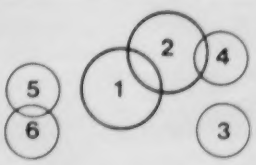
Another combination is a natural area or man-made natural area. The climbing won't spoil the environment. A social component can be added by a treehouse or woodland playhouse.

Exploring and inquiring activities would be available just by providing access to the natural environment.



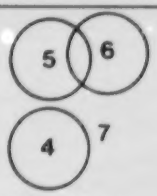
Small Space Near Units

3a Physical: strategy (tetherball)
3b Physical: strategy (ping-pong)
5 Social (seating)
7 Intellectual (table games)



Small Open Area with Buffer Mound

1 Physical: ball in the air (open space)
2 Physical: ground related (mound with slide and paved path, etc.)
3 Physical: strategy (clock golf)
4 Physical: risk (climbing structure)
5 Social
6 Creative (sand with water pump)



Natural or Man-Made Natural Areas

4 Physical: risk, challenge (ropes in trees)
5 Social (playhouse)
6 Creative (sand, water)
7 Intellectual (exploring, etc.)

Note: The absence of a circle around 7 indicates that the whole site is used for intellectual or exploring activities.

Sample Location and Clustering of Play Opportunities Using Typical, Rather Than Ideal, Site Plan Examples

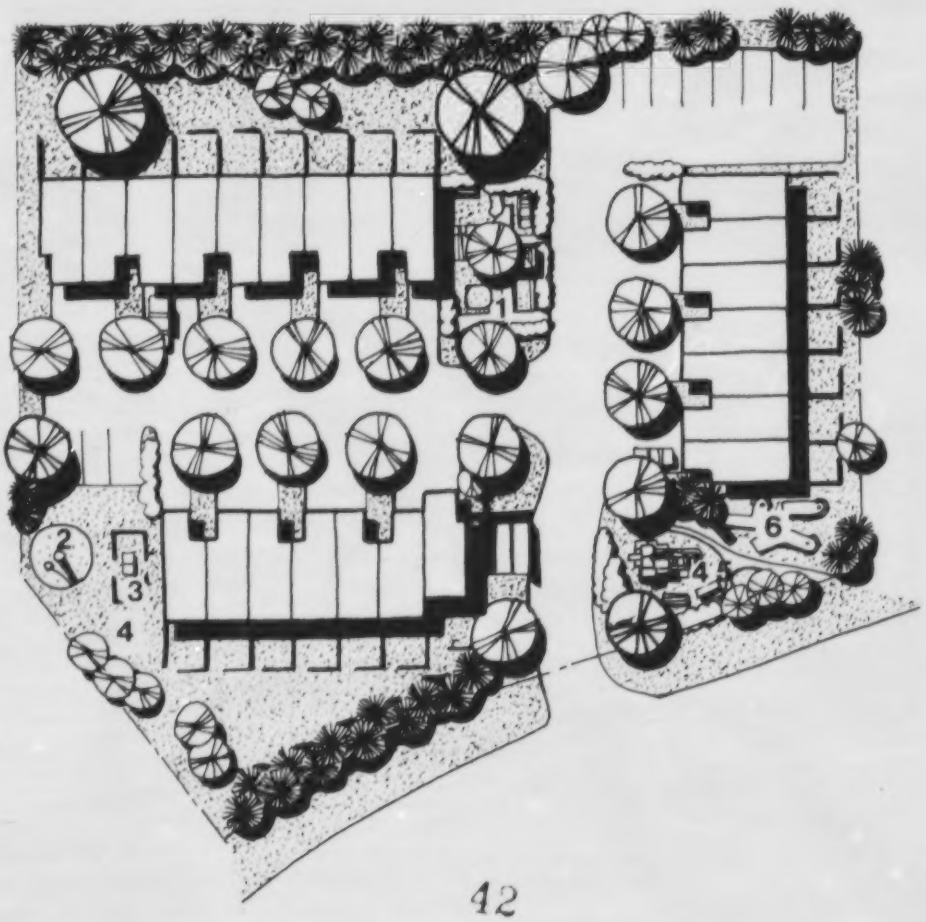
Small-Scale Developments: In small medium-density projects of less than 50 family units, there may not be sufficient space to provide opportunities for throwing games and many of the ground-related physical activities. Because of the limited space, the development of play opportunities in smaller projects should emphasize specific types of physical, social, creative and intellectual activities that are quieter in nature than many of the ground-related physical activities and that do not require large areas. Specific areas set aside for play should be developed for multiple use, combining opportunities for a number of different types of activities that are compatible to each other, e.g. strategy games with social and creative activities.

It is important that the provision of play opportunities be made on a knowledge of the specific types of play to be accommodated so that the space can be designed to suit the particular requirements of these activities.

1) *Small Scale Development*

Statistics
Area: 1.77 hectares
No. of Units: 23
Density: 13 units per hectare

Legend:
1 Preschool play area
2 Tetherball
3 Ping-pong
4 Quiet, sitting area
5 Climbing apparatus
6 Miniature golf



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Medium-Scale Developments: In moderate-size medium-density projects of 50 to 100 family units it should be possible to provide one fairly large space either for ball games or ground-related physical activities. Opportunities for other forms of physical, social, creative and intellectual activities should also be able to be accommodated throughout the site. The emphasis in moderate-size projects should be to create as many multiple-use play areas as possible. For example, it is possible to develop one large area that would provide opportunities for both ball games and ground-related activities. Similarly many more opportunities for ground-related activities and strategy games could be created by careful design of the walkway system — widening the surface in certain areas to give room for bicycles or hopscotch and other sidewalk games.

Because of the limited space available in moderate-size projects the activities selected must not need large play areas or generate a lot of noise as this would require more separation space from the housing units and outdoor living areas. It should be possible, in a project of 50 to 100 family units, to provide several small spaces specifically developed and equipped for school-age children's play.

2) *Medium-Scale Development*

Statistics
Area: 3.14 hectares
No. of Units: 81
Density: 26 units per hectare

Legend:
1 Preschool play space
2 Horseshoe pit
3 Tables and seating area
4 Hill with curving asphalt path
5 Climbing frame
6 Open space
7 Play stream

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Large-Scale Developments: In large projects containing 100 units or more of family housing, play opportunities should be provided to accommodate a wide range of physical, social, creative and intellectual activities. In this size of project it is possible to provide an ample communal space for use by all age groups with appropriate separation from the dwelling units.

When a project is large, it is a temptation to group all the school-age play opportunities into one large space or playground. However this ignores the territorial nature of this age group's play patterns. Therefore, in addition to the communal open space or play mounds, it is better to develop a number of small areas for specific activities throughout the site that will be more readily accessible from the child's home base.

In addition, the availability of suitable neighbourhood facilities such as a school playground, public parks and community centres should be taken into consideration when assessing the play opportunities to select within the site. However, a neighbourhood play facility must be publicly accessible on a daily basis to meet a part of the play activity needs of the school-age child. It should be no more than 200 m from the housing site and the access to it must not involve crossing a major roadway such as a highway, arterial road or major local collector street.

3) *Large-Scale Development*

Statistics
Area: 2.81 hectares
No. of Units: 202
Density: 72 units per hectare

Legend:
1 Preschool play spaces
2 Play stream
3 Hill with curving asphalt path
4 Open play space
5 Asphalt pad
6 Natural area
7 Adventure playground shared by the neighbourhood

Design Details

This chapter deals with specific design details of facilities to enhance their value. It suggests design solutions that fit the characteristics and play needs of the school-age group.

Attention to the issues and performance criteria for each play facility described will serve as a base for the designer or community group to use their imaginations. This will enable them to create design solutions that fit their own site, pocket book, climate and child population.

Design solutions provided here are often augmented by other publications of the Children's Environments Advisory Service to which references are made.

Roads and Parking Areas

Issues

- Children's play and vehicular traffic are incompatible. One spoils the activity of the other.
- Streets and parking areas attract children's play activities because in medium- to high-density housing they are often the only places where there is a large enough hard-surface area to accommodate certain popular play activities.

Performance Criteria

- Adequate play opportunities should be incorporated in the planning and design of the housing development to attract the children away from roads and parking areas.
- Play areas should not be located near through-traffic routes or parking lots; even small parking lots are dangerous.

Design Suggestions

- Cul-de-sacs, regular loop and P-loop road arrangements can be used in multiple-family housing to discourage through traffic and create a safer environment for children's play.
- The width of the road at each end of the block can be narrowed and speed bumps installed to discourage through traffic and reduce speed.
- Raised parking markers in a parking lot will inhibit children's use of the lot for play.
- Parking lots and streets may be used for play on special occasions by temporarily closing off these areas to traffic.
- Surplus parking spaces can be developed as play areas by the use of temporary barriers such as planters or wooden barriers that can easily be removed at a later date should the demand for parking increase and the children's need decrease.

Walkways

Issues

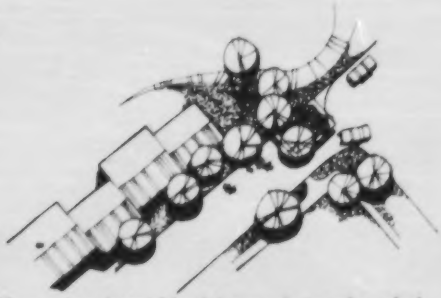
- Children often use walkways for play activities that interfere with regular pedestrian use.

Photo John Roaf

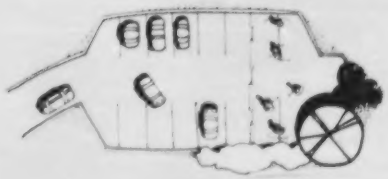
Walkways keep children off the street. . .

Photo CMHC

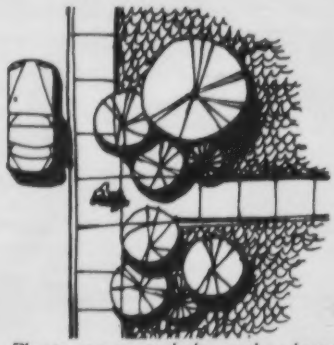
. . . but not off the grass



Narrowing the width of the road at each end of the block discourages through traffic and gives priority to children.



Surplus parking can become a play area when temporary barriers are erected.



Plants can control play and pedestrian traffic.

Photo CHDC

Changes of level in sections of walkways are fun for children.

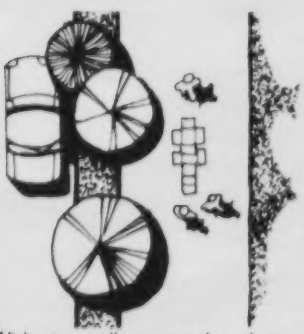
- Walkway systems that are placed too close to dwelling units or that are poorly lit are often abused by older children causing property damage and noise nuisance.

Performance Criteria

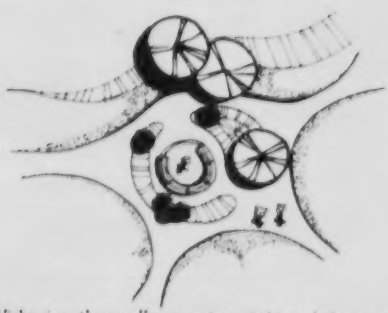
- The walkway system in multiple-family housing projects should be planned as a positive attraction keeping people, especially children, off the street and be wide enough to combine some limited play activities.
- Walkways should be separated from individual dwelling units and private outdoor areas and should be adequately lit to increase their use and ease of supervision after dark.

Design Suggestions

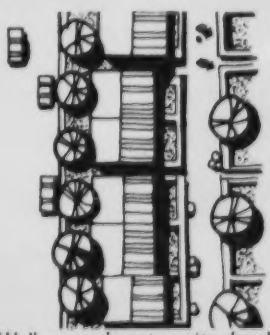
- Walkways designed with a width of 1.5 to 2 m are sufficient to accommodate both pedestrian traffic and opportunities for play. This width will also make the walkway more appropriate for physically handicapped users, especially those in wheelchairs.
- Widening the walkway at certain points can create small, interesting areas for play as well as a space where benches can be added to provide a gathering area.
- Appropriate planting along walkways can control both pedestrian traffic and play.
- Temporary fencing can be put around the base of plants until they have grown enough to withstand a certain amount of abuse and wear and tear.
- Bricks are not advisable for surfacing in family housing projects because of their rough, uneven, abrasive texture. Concrete, asphalt, lock stone or unit stone work well. Surfaces should be hard enough for play, comfortable for walking and easy for wheeling baby carriages, wheel toys and wheelchairs.
- Small hills incorporated into specific sections of the walkway system can increase its play opportunity for activities such as bicycling and skateboarding.



Widening walkways makes them more usable by children and the handicapped.



Widening the walkway at certain points can create small, interesting areas for play.



Walkways close to units should be well-lit and private gardens well-defined.

Natural Areas for Play

Issues

- Natural areas are rarely preserved within a housing project and even when they are, children's fascination with natural environments and the high value nature has to children's creative and intellectual play are seldom recognized.
- Parents often prohibit children from using the area because of assumed danger. This sometimes leads to conflict between the generations and often secret use and abuse by children.

Performance Criteria

- Wherever possible, natural areas should be preserved and made accessible to children.
- To discourage abuse, the area should be kept clean and be inviting and accessible to users of all ages.

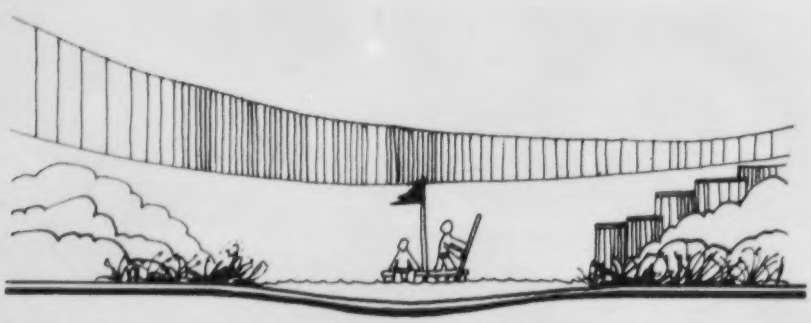
Design Suggestions

- Clearing out underbrush in parts of the natural area, depending on the size and ecological value of the plant material, aids in access and playability.
- Unhealthy trees and those that are not indigenous should be selectively removed to encourage regeneration.
- If a pond exists, it is best to clean it out and remove debris and undesirable plant species.
- If there is a marsh, one is faced with the choice of leaving it for environmental study or making the area more playable by some draining and redirecting of water flow.
- If a stream exists but is hard to reach because of slippery, steep sides, ground moulding redirecting the water or erosion controls may be necessary for minimum maintenance and safety.
- Stones or gabion baskets or a concrete retaining wall at certain parts of the stream can increase access and enhance play by controlling water depth and flow.
- Planting trees and making paths with the children's involvement, will improve their sense of responsibility and reduce unintentional abuse.

Children love playing in natural areas.

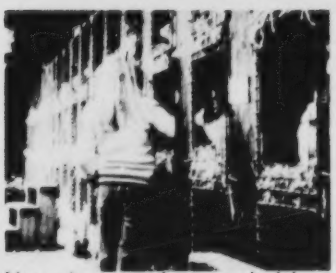
Discovering develops a sense of inquiry.

What's in there?
Could it be a bear?

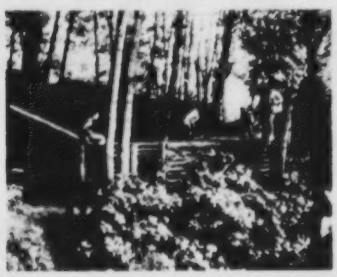


Ponds in natural areas can be great fun for school children.

Fording a stream Indian style.



Natural areas make a wonderful place to keep small animals.



Play structures can blend into the woods.

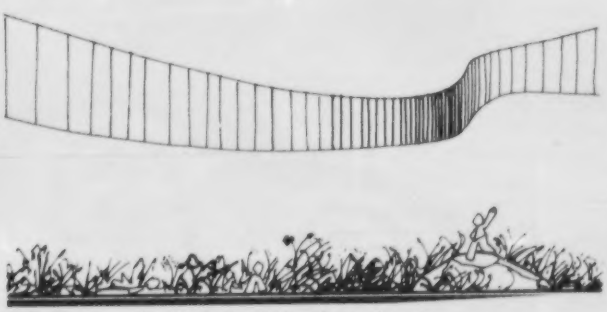
- Low branches which hang over paths should be trimmed to provide safer walks, ski trails, etc.
- Wild flowers, flowering plants and other interesting features should be introduced where feasible.
- Natural areas often make an excellent area for the children to keep small animals — rabbits, gerbils and white mice. Children can be allowed to build appropriate cages for the animals in designated areas.
- Some simple physical play equipment, such as ropes strung from sturdy tree limbs or an adult-built treehouse or climbing frame, can be added to a natural area. Equipment should take advantage of the existing contours and growth patterns of a particular woods.

If the woods are small in area, the children's own treehouse might ruin the trees and be hard to control. Child-built treehouses are better suited for an adventure playground rather than a natural area used by all ages.

The tradition of play structures, as long as they do not dominate, will potentially increase use and cut down on abuse of the woods. However, it is not always appropriate to add play structures to a naturally wooded area; so much depends on the nature of the woods and the location and availability of other opportunities for play.

- Barbecue grills and picnic tables appropriately placed and with good access will encourage family use of natural areas.
- Meadows or clearings should be maintained and cleaned of any refuse. The grass can be left long and rock outcroppings untouched. Wild flowers can also be added (whatever grows naturally in the particular climate). Noxious weeds such as poison ivy should be removed wherever possible.
- If there is space on a project, natural woods or streams can be recreated. For example, indigenous grasses can be planted and left uncut and streams and ponds can be constructed to be as natural-looking as possible. The combination of protective material around young trees and children's involvement in the planning and planting of the natural area will help preserve it during its growing period.

Treehouse and ropes make this natural area more playable.



Meadows or clearings should be cleaned, grass left long and rock outcroppings left untouched.

Open Green Space

Issues

- Valuable open space that can be used for play is often made useless by the arbitrary planting of trees or shrubs that obstruct the open area, thus spoiling it as an activity area.
- Open space often does not have its boundaries properly defined, and as a result, play often invades private space or comes too close to the units.

Performance Criteria

- An open space should be clear of obstructions, with ample additional buffer space to lessen the problem of flying balls or other missiles entering private zones. Plants or fencing can be used in smaller spaces to contain flying objects.
- Open-space boundaries should be defined to discourage spill-over play, or the area around private outdoor space should be clearly defined or protected from invasion.
- If most of the open space is flat or sloping gently for aggregate drainage, the maximum number of physical activities can use the area. Changes of level can be used as a buffer around the edges and this combination of levels can be used for sliding in winter or as a skateboard path in summer.
- Open-space uses should be as varied as possible by providing hardware for removable poles for net games or removable goal posts.
- Open space should provide visual relief and aesthetic enjoyment for all age groups without destroying its play value.

Design Suggestions

- A hardy, well-drained grass surface makes an excellent play surface and is visually pleasing.
- Plants around the edges of the open area can help define the space, contain the play and increase the pleasing visual effect.
- Countersunk metal pipes can support poles for net games. They should be below grass level, with

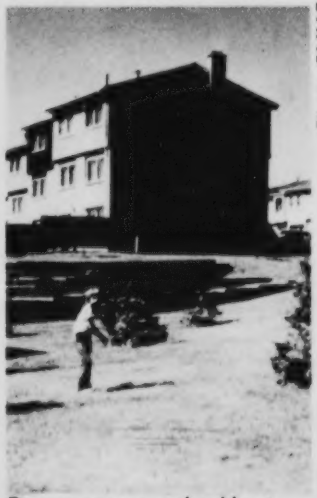


Photo CMHC

Open green space should not have plants that impede its play use.

Photo CHDC

Plants or fencing around the edges of play areas can help contain play.

Photo CHDC

Running games are a great favourite with school-age children.

Mounds can provide places to learn to ski.

permanent metal plate covers spring-loaded to the inside of the pipe to keep out dirt. Poles then can easily be removed to free space for other uses.

- Open space with adjacent slopes or appropriately designed high mounds can be used for run-outs for sleds. An asphalt path on the mound and part of the flat area can be used for skateboarding and go-cart racing. A mound can also serve as a grandstand and a buffer.

Mounds for Play

Issues

- The play possibilities of topographical features are often not recognized.
- Natural changes in level are often destroyed during development, causing unnecessary costs and drainage problems and spoiling the play potential of the area.
- Mounds or berms, created as a noise or visual buffer or for spatial definition, often do not serve more than one purpose thus losing their potential for play.

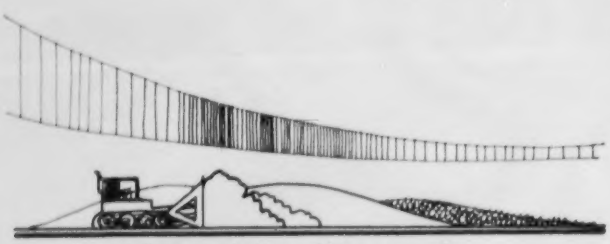
Performance Criteria

- Wherever possible, mounds and changes in level, whether natural or man-made, should be exploited for their play potential.

Design Suggestions

- Plants on a mound should be arranged so that a winter sliding strip or path is kept clear and the run-out is onto an area that is safe from traffic.
- A hard-surface path down the mound can be unobtrusive in appearance and concentrate the usage to a definite strip. An appropriately designed way up the mound, such as stepping stones, may be added, thus saving wear and tear on the remaining surface.
- These additions extend the use of the mound for year-round play. For example, skateboarding, go-carting or the use of wheeled toys, as well as tobogganing, sledding or skiing, can take place on the mound.
- Plants on a mound can be used to

Countersunk metal pipes to hold nets increase the variety of use for open areas.



Mounds and hills can be built to add interest and play value to an area.

direct play traffic away from a dangerous area such as a street, or away from an area that might conflict with other users' interests.

Paved Surfaces

Issues

- If located in the wrong place, a hard-surface area for children's play in a housing project can result in problems. If done incorrectly, the area can look bleak, become the site of noisy activities or, worse still, not be used at all.
- Children seek out hard surfaces close to home for hopscotch, street hockey, broomball, roller skating, skateboarding and street games. If no alternative play area is provided they will use the street, parking lots or sidewalks which results in dangerous conflicts with other uses.

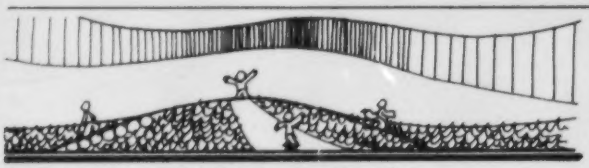
Performance Criteria

- Most activities require a smooth, flat surface. Decking and paving, which are hard and flat, are fine for some games but inhibit others, so the choice of surface depends on which activities are anticipated. An area 150 m^2 for group activities is recommended for this age.
- It should be conveniently located for child users and not be too unsightly for other user groups in the project. It should be separated sufficiently from the units and private outdoor areas so as not to cause a noise nuisance.
- Hard-surface areas should be designed so they can be used for play in winter.

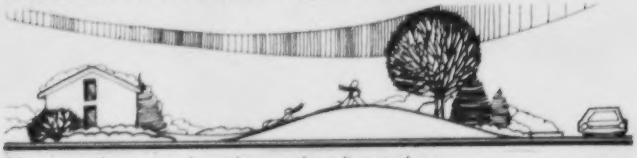
Design Suggestions

- Flat paved surfaces can be enclosed by a berm on at least three sides which will lessen the bleak visual effect of the paving and serve several other useful purposes. If the berm is approximately 1 to 2 m high, an appropriate arrangement of indigenous plants on the back will help to hide the hard surface.
- The inside of the berm will help to contain play activities; grass should be planted on it so it can serve as an informal bleacher.

Many games are played on paved surfaces.



A hard-surface path down the mound can be unobtrusive and concentrate usage to a defined strip.



Plants on the mound can be used to direct play traffic away from a dangerous area.

Plants on a mound should be arranged so a winter sliding strip with ample run-out is kept clear.

Photo CMHC

In winter, a paved area can become a skating rink.

Photo CMHC

Water can form an integral part of the landscape and be enjoyed by all age groups.

- Paved surfaces in a very limited space will be improved by a fence or dense hedge to contain flying objects and reduce noise. A chain-link fence with vines acts as a visual buffer in summer. If the fence is high (3 m or more) games such as basketball, volleyball or tennis can also be played here.

Water Play

Issues

- Introduction of water play to a site is often prohibited because of possible pollution, danger to small children and the cost of recycling pumps or filtration devices.
- Water that is introduced in the form of ponds and fountains is usually purely for aesthetic purposes and not planned for play.

Performance Criteria

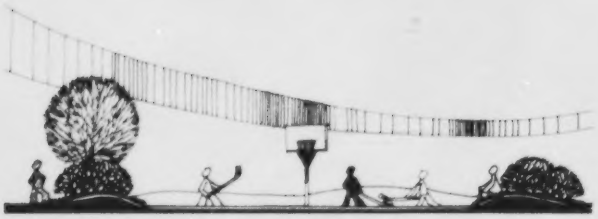
- Whenever water is introduced to a site, it should be designed to attract children because of its play value.
- Value should be attributed to the stimulus that water provides for creative, social and intellectual play.
- Play use of water might include being dammed, redirected, mixed with sand or earth, waded in, or serving as a surface for toy boats or child-size rafts.
- Water play areas that perform some or all of the above purposes have more developmental value than water arrangements that just serve as a device to get wet (sprinklers) or for splashing (wading pools).

Note

The activities and benefits of swimming pools are not dealt with in this publication.

Design Suggestions

- Play streams can be incorporated into the total site plan, not just relegated to the children's playground. If properly designed, they can be pleasing to all ages and can, on occasion, take advantage of natural sources of water. Rain water can be harnessed by storing it and using it as an inexpensive source of



Low berms around a paved play area reduce its bleak look and contain the play (street hockey in this example).

water for artificial brooks. The water storage tank could be used in combination with a manual pumping device.

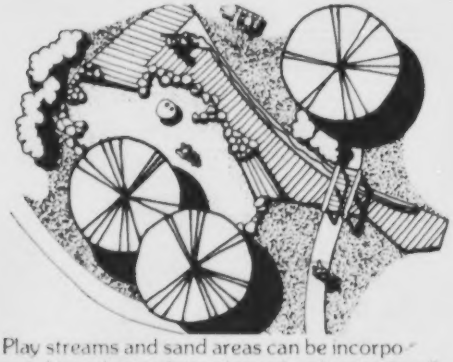
- Edges of the stream can be stabilized with rocks, gabion baskets or concrete or wooden decking to reduce mud and erosion.
- Artificial sources of water can be brought to the site by a variety of simple and fascinating manual pumping devices as well as a windmill.
- The water source for a play area can have a control tap that prevents use when unsupervised or in cold weather. Water can fill a play stream like a bathtub and be drained by a valve system daily, if necessary. (See *Creative Playground Information Kit I*, NHA 5104).
- A hand pump also is a way to control water wastage. Because manual power is required to make it work, it cannot be left running. A pump need not have a real well; it can be hooked up to a water system where a release valve has the same effect. However, where water tables are high, a well is often an ideal source of fresh water for water play. A properly secured cover over the well can eliminate the danger usually associated with old rural wells.
- Fountains used for decorative purposes can also be used for play usually with a minimum of adjustment.
- The height of the water basin of a fountain can be designed so a child in a wheelchair has easy access to it.
- Water that runs over rocks and down the side of other surfaces discourages children from drinking it, but does not destroy its play value. If fountains are big enough to get into, non-slip surfaces on the bottom will help to prevent falls.
- Real or artificial ponds make fascinating play areas for school-age children. See "Design Details, Natural Areas for Play" for suggestions about treatment of ponds to make them more playable.

Note

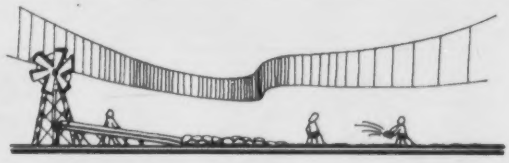
The danger of standing water cannot be eliminated from all water play areas, especially those with multiple use, nor should that be a design solution.

An artificial play stream can meander through a playground and be fun for everyone.

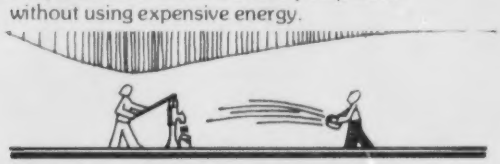
Harnessing rain can make for lots of intriguing fun.



Play streams and sand areas can be incorporated into the total site plan to be pleasing for all ages.



Simple devices can be made to pump water without using expensive energy.



A hand pump is a way to control wastage. It can be hooked to a valve or a real well.

Water can be used as a play "hazard" and the thrill can be increased.

School-age children can learn to respect the danger of water. The hazards of the streets are much more dangerous for this age group and we seem to accept that problem without question.

Sand Play

Issues

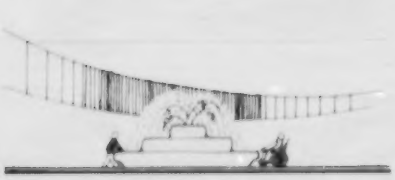
- A sand area in developments appears to cause a lot of trouble. People seem to be concerned about the insects it attracts, its use by cats and its unsightly look if not properly maintained.
- Many housing projects eliminate sand for these reasons, thereby destroying one of the major opportunities for creative activities. The play value far outweighs the extra care necessary for design and maintenance.

Performance Criteria

- Sand must be moist and of a suitable texture to respond to the child's activity of moulding and piling. It must be able to hold its shape.
- It should be deep enough to enable fairly major excavations by the child without disturbing the foundation material. Sand should drain quickly; standing water must not be allowed to accumulate because the sand might turn sour. In clay soils it is imperative that the sand area drainage system be connected to a catch basin or tile. The area should be located so that rain and sun can purify all parts of it for at least some parts of the day. A drainage system below the sand play area is a necessity.
- A sand play area should have shade trees or other shelter located to protect the child at "work" during the hottest part of the day.

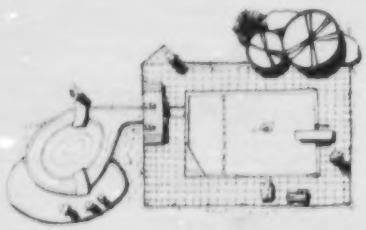
Design Suggestions

- Proper foundations for a sand area are necessary to allow good drainage. There should be at least 300 to 400 mm of granular material at the base. Drain tile to a drainage outlet is recommended, then 100 mm of 20 mm crushed stone on top, covered by concrete slabs spaced to permit water drainage, topped by the sand. The sand must be 300 to 450 mm deep to allow for children's excavations.



If a fountain is properly designed, it can serve a child in a wheelchair and act as a focal point.

Real or artificial ponds make fascinating play areas.



A play pond and sand can be attached to a swimming pool as long as the access to the pool involves passing by a foot bath.

- Many different devices can be used to contain the sand. Walls 1 m high necessitating stepping down into the sand area is one solution. (See *Creative Playground Information Kit 1*, NHA 5104.) If designed to complement the site landscaping it can be an attractive feature as well as playable.

- A stand for a large wooden rake near the sand area, plus a handy refuse can, will encourage maintenance. See the chapter on "Management, Resident Participation and Maintenance".

- Since sand must be moist to mould properly, a source of water near the sand area is essential.

Climbing Structures

Issues

- Climbing structures often disappoint those who provided them, because they do not hold children's attention for long.

- To be of interest to this physically competent age group, the structures need to be high and provide a challenge, even though this is a concern to parents.

Performance Criteria

- The climbing structure must be scaled to provide a challenge and yet not provide hazards in the form of jutting hardware, rough edges or narrow angles that can trap a child's foot or limb.

- It should encourage the use of the large muscles of the body in the arms, legs and back. It should provide varying levels of challenge such as platforms to encourage the timid and to control the rash.

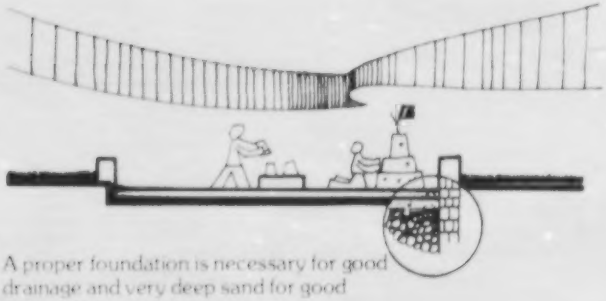
- It should allow free space around it for jumping clear and climbing up at different spots.

- Loose or swinging parts attached to the structure should be distinctively separated and defined to diminish the danger to children running in front and around the structure.

- A soft impact surface should be underneath climbing structures and stretch out far enough to include

Older children use sand for intricate projects, but there must be water to mould it.

Even quiet sand play can end in a roughhouse.



A proper foundation is necessary for good drainage and very deep sand for good excavations.

A sand area can complement the landscaping but must have a water source nearby to moisten the sand.

Wooden play structures are better than metal because they are not affected by the cold or heat.

Photo CMHC

Plenty of challenge is the key.

space for jumping clear without hitting the container's edge.

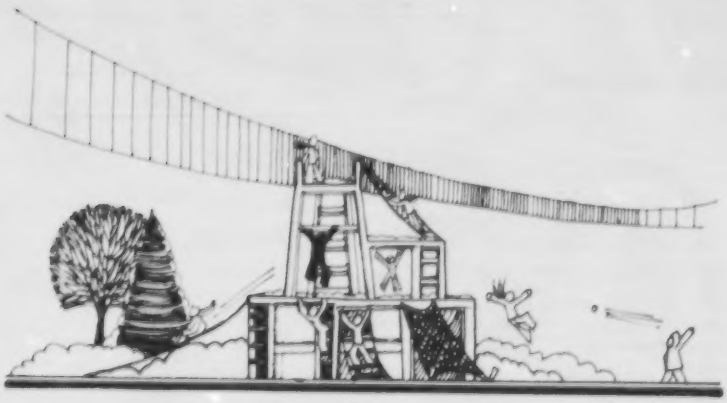
Design Suggestions

- Many manufacturers in Canada make wooden climbing frames that satisfy the performance criteria. The choice should be carefully considered to fit the expected use. For example, if it will have a lot of play traffic at one time, as in a school yard, it will need to be quite large and very sturdy. If, however, the climbing structure is only one of a variety of play opportunities offered and it is not used by many children at one time, then the proportions should be scaled accordingly. A climbing structure will get more consistent use in a housing project if it does not stand in isolation, but instead is part of a play area containing other categories of physical, social, creative and intellectual activities. See the chapter on "The Selection of Play Activities . . ."

- Often, the best solution is to design climbing structures to suit the specific location, clientele and other facilities offered. It is impossible to give exact guidelines or design details, but the following suggestions may be helpful:

  — Wood is better than metal because it is not affected by heat, cold and moisture to the same extent as iron.
  — Wood must be weatherproof and splinter-free.
  — All hardware should be countersunk to avoid sharp contact points.
  — Apparatus should provide a real challenge by being at least 3 to 5 m high at some points, otherwise it will not be used extensively by this age group.
  — The structure should allow as great a variety of uses as possible to make it more interesting, encourage use of different muscles of the body including hanging by the hands, legs and feet and encourage gymnastic feats.
  — There is no limit to the combinations of additions that can be attached to climbing structures such as swinging bridges, pulley glides, slides, cargo nets, etc.

- The impact surface must be soft and resilient. It can be fine dry sand that will not mould into castles thus discouraging sand play under structures. Pea gravel, grass, wood chips or dirt can also be used. The use of dirt may create problems — if



Climbing structures should provide a variety of ways to climb and exercise. They can be tailor-made to suit the location.

it is not well drained it will pack down and become quite hard or form hollows that tend to hold water.

- When the impact surface beneath a play structure is contained, the edge of the container must be a safe distance from the play structure so the child cannot land on it when jumping.

Swings

Issues

- Swings for school-age children, if used in the ordinary way, need to swing high to provide real challenge and therefore they can be quite dangerous not only if children fall, but if they hit others in full flight.
- Swings attached to a climbing structure, even if they are a shorter type, can cause conflicts.

Performance Criteria

- High swings should be placed to allow access only from the front and should have some sort of landscaped barrier enclosing them to deter play traffic from running too close. Swings should perform different physical development functions than just the traditional rhythmic push-pull movement.

Design Suggestions

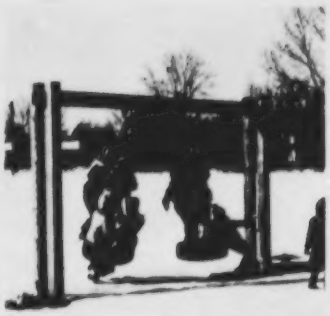
- High swings, with ropes or chains exceeding 3 m in length, should be located in such a way as to prevent mounting or walking behind them. They can be enclosed by shrubs, placed in a corner or located near a fence or building (with proper clearance at full swing, of course).
- Swinging fun can be created by placing a series of tire swings in a row at approximately 1 m intervals. Play involves swinging from one to the other and transferring oneself to the next tire swing in line. This exercise needs physical effort and rhythmic skill. It is one of the commando training exercises and of course, an old technique of locomotion for Tarzan.
- Swings are safer when located near the entrance to a playground because they are the first thing the children see.

Pulley glides are safe but provide a challenge and require skill to operate.

Any movable parts such as pulley glides or swings should be kept in the clear so children do not collide on the play structure.

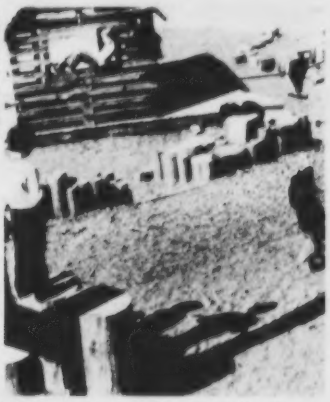
Swings can be attached in many different ways to give a variety of exercise.

Large tractor tires on a short chain can serve as a gang swing.



Swings need to be much more challenging to attract older children.

Photo CMHC



This age can perform acrobatic feats — hair-raising but fun.

- Large tractor tires on a relatively short chain (2 m) can serve as a gang swing which usually is more social fun than exercise. However group cooperation in pushing can result in quite a thrill.
- Hanging tires different ways, sideways or flat, can inspire many uses not anticipated by the designer. This age group will stand on the top, or inside the tire, rather than sitting on it, and if the tire is hung flat, they will stand or sit with a friend for synchronized swinging.
- Surfaces under swings should be soft and the same guidelines should be followed as those for climbing structures.

Slides

Issues

- Slides have to be quite steep or long and have interesting contours to hold the interest of this age group.
- If a steep slide is reached by way of a high ladder with a high platform on a launching pad, it can be very dangerous, mainly because children tend to crowd each other at the top and start fooling around.

Performance Criteria

- The slide should be steep enough to provide a real challenge or thrill, otherwise it will not be used. Wherever possible the contours of the land should be followed.
- The slide can be wide enough to take several children at one time. For safety it must have a curve at the end that slows the child's speed and a 150 mm drop-off to prevent children from jarring their spines.

Design Suggestions

- Slides can be imbedded in hills or mounds, even concrete mounds that are built for the purpose, and are safer than the high-ladder type.
- Slides can form part of a climbing frame.
- Circular or spiral slides are fun, and if the sides are high (about 125 mm), the danger of falling is decreased.

Slides can be built like a chute and follow the contours of a hill or twist and tilt to add extra speed or control.

A mud slide is messy but great fun for this age.

- Slides that are long and follow a natural slope can be built like a chute with legs that vary the pitch (forward) tilt (sideways) and direction.

- Slide surfaces can be made of masonite, stainless steel, or hard outdoor plastic material.

- A large soft plastic sheet on the side of a hill with water pouring down its surface makes a great summer slide with a lovely muddy finish!

Playhouses

Issues

- Playhouses built for this age group by adults are not as satisfactory as those that children build themselves. However, they still have a useful role in stimulating social play among the younger half (6 to 10) of the age group.

- Playhouses are controversial since some adults worry that children will use them as a hide-out for unacceptable behaviour.

Performance Criteria

- Playhouses for this age group should be small enough to be cozy, but big enough to accommodate three or four children at once (at least 1800 × 1800 mm).

- Depending on the location, if surveillance is necessary, an open log structure can be used to allow viewing while at the same time providing a sense of coziness.

- There is no correct design for playhouses; however, some effort should be made to have them fit in with the surroundings or house style of the project. (See *Creative Playground Information Kit 1*, NHA 5104.)

Design Suggestions

- Playhouses should have floors to prevent the ground inside the hut from becoming damp.

- The door sill should be raised at least 100 mm off the ground to facilitate opening the door in the snow during winter.

- The roof can be made climbable or form a roof deck for limited additional play use.

Slides need to be steep enough to provide a real challenge for this age.

Loose material makes a playground a learning centre. Storage sheds are essential.

Photo CMHC

A playhouse works better when there is loose material to make it come alive.

- A playhouse with a stair or ladder to the roof deck or a roof that children can scramble on, should not incorporate any other climbing equipment. Otherwise it will turn into a physical play activity area which is in conflict with social play activities.
- Sometimes, the addition of a bench or table stimulates social play. Better still, have blocks and boards available so children can construct their own furniture.

Storage of Loose Material

Issues

- Loose play material is difficult to keep track of — a problem which is usually solved by not supplying loose material.
- Storage areas for loose play material are usually inadequate in size and thus become junk cupboards or are inaccessible to children. In addition, they are seldom designed to encourage neatness and functional organization.

Performance Criteria

- The storage facility for loose material should be designed to be accessible to children and have an organized interior with shelves and books to encourage neatness. Loose material is the "tool" of play and should be stored with the same care and convenience as items in a well-organized hobby room or carpentry shop.
- If vandalism is a problem, storage cabinets should be built of solid material and have a sturdy locking system.
- Doors to storage cabinets should be elevated to prevent them from freezing shut in winter.

Design Suggestions

- A stand-up cupboard is easier to get at than a storage chest and the contents can be better organized inside. It should not be too deep (maximum depth of 1 m) because this means moving objects each time something is needed at the back. The height and width depend on the number of objects to be stored. "The

Playhouses can come in different shapes and sizes; loose material to make furniture extends the play value.

bigger the better" is the general rule, then it is easier to categorize objects.

- Storage cupboards combine well with some physical activities as long as the access to the inside is kept clear. Children using the storage area should not be endangered by jumping or swinging.

- Storage chests are limited functionally, as they easily become a mess. However, they can be useful for sand toys or small blocks. A double-hinge system, which enables the lid to fall back and fasten down behind when the chest is open, prevents accidents with heavy lids and discourages playing inside with the cover down.

- Storage walls using the side of a building are a solution.

- Loose material for play can be stored in the same place as maintenance equipment if a partition and separate doors with different key systems are provided.

Note

The addition of some kind of storage space for loose material can make a dramatic difference in the quality and variety of play opportunities for this age group.

The key to the storage area can be kept by a children's group, a tenant or a home owner's committee. (See the chapter on "Management,Resident Participation and Maintenance").

Seating

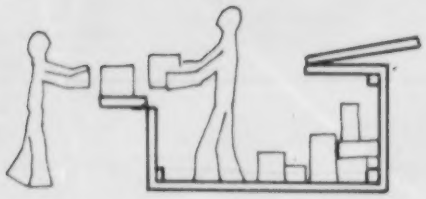
Issues

- Since projects rarely provide casual seating areas they lose the opportunity to control the meeting places of children and young teens.

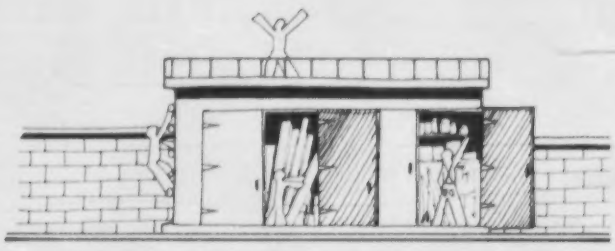
- This age group has a tendency to gather in places like shopping centres, hallways or on street corners, which is annoying to adults. Sometimes they pick a spot without seating, which may be a rock or a clump of bushes. It becomes a favourite meeting place for no reason that an adult can see.

- Often school-age children choose a preschool playground to gather, just because there is nothing else available, often spoiling it for the younger children by dominating the

Loose material increases the variety of play activity.



A storage chest can be used for small objects such as sand toys.



In creative playgrounds the storage area for boards, unit blocks, saw horses etc., can be combined with the maintenance cupboard.

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Table games are a great favourite with this age.

climbing apparatus just to perch or "hang around".

Performance Criteria

- Providing seating to attract older school-age children (9 to 14 years of age) and keep them away from undesirable haunts involves a careful choice of location.
- The location must be within casual view, but not too close to any unit. Children of this age tend to be fairly noisy even if they are just passing the time of day.
- Seating should be placed so that young people can see each other and converse easily.
- Some sort of table surface is an attraction for informal table games or informal perching.
- A shelter or enclosure helps to identify the spot and gives a sense of place which increases its popularity.

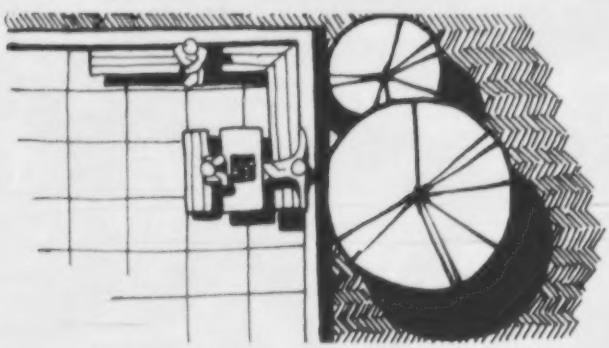
Design Suggestions

- Corner seating arrangements work well. Plants behind benches provide some shade adding to the attractiveness and appeal to different user groups.
- A shelter that is attached to a table can give a sense of enclosure if located in an unprotected open space.
- Locating the seating near school-age activity areas, such as physical activity areas, is an excellent way of attracting the "fringe crowd". Facilities for picnics, crafts and table games for other age groups can also be provided.
- All seatings for this age group should be adult size. All seating should also have backs for the comfort and use of the handicapped. Backrests are needed for support when sitting down and to help the handicapped, youngsters and senior citizens to stand up.

Adventure Playgrounds

Issues

- Adventure playgrounds are a new concept to most people and are often met with apprehension by adults.



Corner seating arrangements work well.

A shelter attached to a seating area gives a cozy feeling and provides protection from the weather.

- Children build their own huts, forts and climbing towers with real tools and scrap materials. Such playgrounds are considered dangerous, messy and slightly subversive. (The child has too much autonomy.)
- The cost of leadership is also considered a negative factor.
- The developmental value of adventure playgrounds is given lip service. Everyone admits that children seem to really enjoy them and that they do very creative and productive "work" there. Adults also admit that children learn responsibility, competence and cooperation. Yet, Canadian adults are still reluctant to invest in the concept; they would rather spend money on equipment even if it is never used.

Performance Criteria

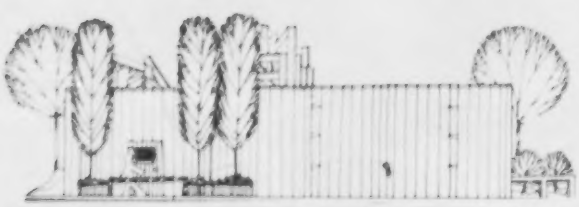
- An adventure playground should be large enough to allow the construction of many huts and some large group projects such as a climbing structure.
- There should be some open space ball games and a large area near the truck entrance to pile scrap lumber for building. Total minimum area required is 1000 m^2.
- Space should also be provided for keeping birds and animals, such as goats, rabbits and horses, where possible.
- The location must be away from units because of the noise factor.
- The space must be enclosed to prevent entry when the leader is not there and to deter vandalism by rival gangs of children.
- The enclosure should form a visual barrier in areas where the messiness might annoy other user groups.

Design Suggestions

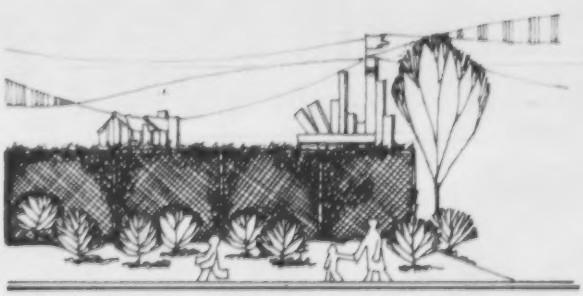
- An adventure playground must be located away from the units or private outdoor space. The best location is on the edge of a project or in a visual buffer area. It can be located near a highway or major road as long as the access is designed to prevent children from rushing into the street. In an existing neighbourhood, an adventure playground can be located near commercial or industrial sites, or on power right-of-ways, with special approval.

Seating to attract children 9 to 14 years of age should be located within casual view of dwellings and be placed so young people can see and converse easily.

Crafts need a table to prevent them being kicked around.

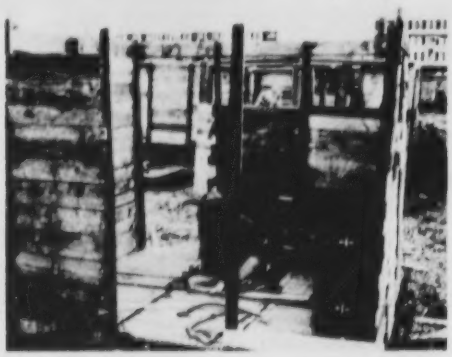


Barriers on the curb prevent children from rushing onto the street from the "people's entrance". However, the truck entrance is left clear.



Mounds with plants and vines help a mesh fence become a visual barrier. Adventure playgrounds need screening from the public.

Children build their own huts with scrap material.



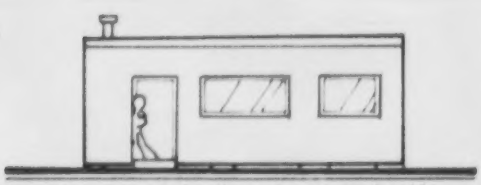
Girls also enjoy construction.

Photo CMHC

Leaders or play workers are essential on adventure playgrounds — they are friends, animators and arbitrators.

An adventure playground makes a wonderful place to "work" and meet friends.

- The fence should be at least 3 m high and be free of crossbars so children won't climb on the outside. Depending on the location it may need to serve as a visual barrier as well. Wood, stone or concrete blocks at least 180 mm high, with wire mesh on top, is one solution. The cheaper chain-link fence can also be used with fast-growing trees planted around the outside.
- Mounding around the outside of an adventure playground, with a fence running along the top of the mound, makes a good visual and security barrier.
- There should be a gate wide enough for a truck to enter with supplies and a smaller gate for people.
- The hut can be simple in design but should be winterized and contain a bathroom, office space for the leader and a playroom approximately 9 × 9 m.
- A tool house or tool shed attached to the play hut, easily accessible to the builders, will also be needed.
- Space for the scrap pile needs to be fairly large, approximately 6 × 6 m,



A simple, winterized, indoor play space should be provided.

to take the odd collection of discards that will be stored there.

- Leaders or play workers are an integral part of the adventure playground concept. Facilities for the leaders should be taken into consideration in the design.
- The Adventure Playground Management Committee is essential to the success of this child-play program. It must be community-based and act as a support for the leader/play worker.

Note

Full details about adventure playgrounds are found in the *Adventure Playground Information Kit 2*, NHA 5105.

Animals are an important part of an adventure playground.

Site Design Examples with Construction Costs

The following site design options occur in four different contexts.

The examples illustrated are from existing housing projects in Canada or from a typical neighbourhood street. They are not intended to depict the ideal site layout.

The play opportunities selected are related to one another in a manner consistent with this advisory document.

The amenity areas designated for school-age children's activities indicate the preferred allocations which in most cases exceed the minimum.

Construction Costs

Estimates were developed in 1979 for the site design examples to give some guidance on construction costs for equipment and site details. However, it must be appreciated that costs will vary appreciably across Canada and according to local market conditions.

Generally, the estimates reflect the cost of work carried out as part of total project development and include overheads and profit. In the case of the existing neighbourhood site design example, this would be a separate project and the costs reflect the higher overheads.

Give us the opportunities, we'll do the rest!

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When it is necessary to use more land or reduce the number of units in order to incorporate play spaces into a project, the value of the additional land or the displaced building lot(s) must be taken into consideration. In most projects, play spaces can be incorporated into the basic amenity space provided, therefore the cost of amenity space development can be deducted from the cost of the play space. The cost of the land must always be added to the existing neighbourhood design solution.

The cost of servicing such items as play streams and play huts has been kept separate as these can vary considerably depending on the availability of and distance from communal services. In cases where there is no requirement for communal services other than for play spaces, it becomes necessary to establish a special water and electrical service and metering system which could be very expensive.

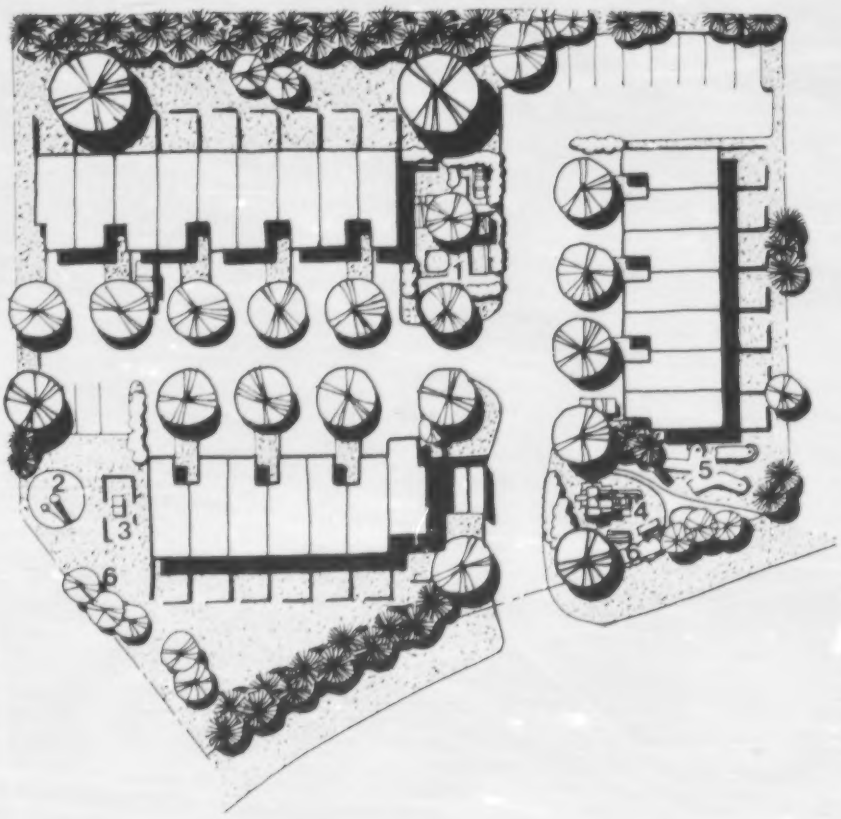
Community groups developing school-age play areas could reduce costs substantially by providing voluntary labour or persuading material suppliers to sponsor a gift to the community.

It is important to note that the school-age play space should be sited at the same time as the layout of roads and housing is determined. Location of the play space should follow the principles outlined in the chapter on "The Selection of Play Activities . . ." This will avoid the much too frequent policy of tokenism (i.e. placing the odd play structure on space left over after planning has been completed) and will greatly help in keeping costs to a minimum.

1) Small-Scale Development

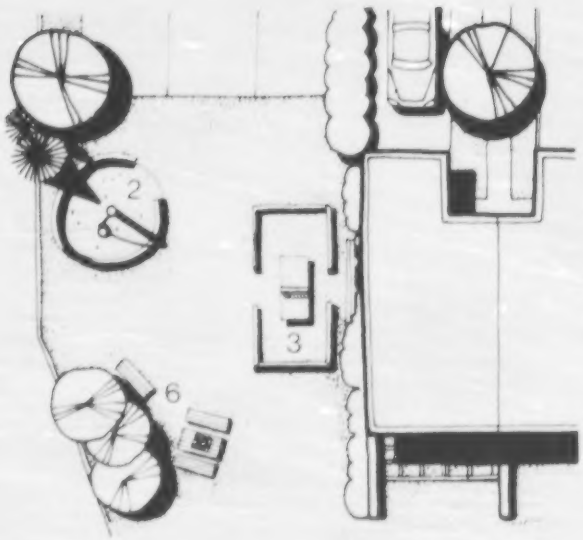
Statistics

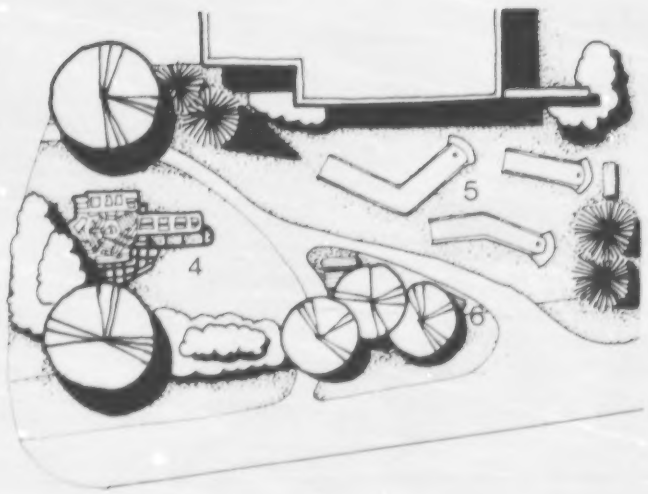
Area: 1.77 hectares
No. of Units: 23
Density: 13 units per hectare



Legend

1. Preschool play space
2. Tetherball
3. Ping-pong
4. Climbing structure
5. Miniature golf
6. Quiet sitting areas





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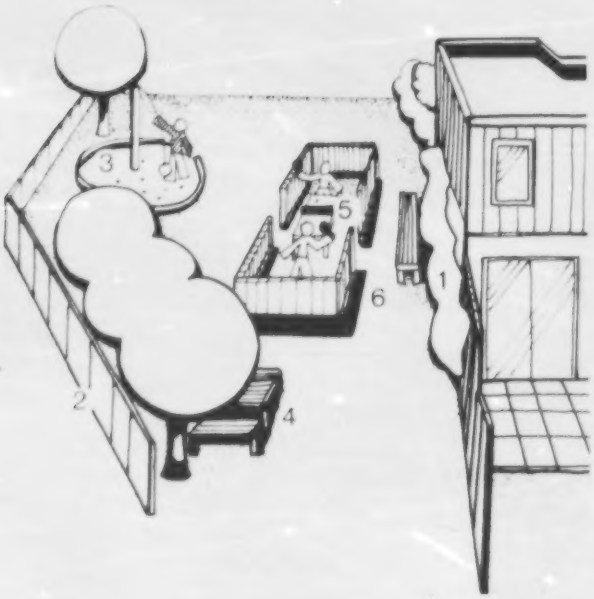
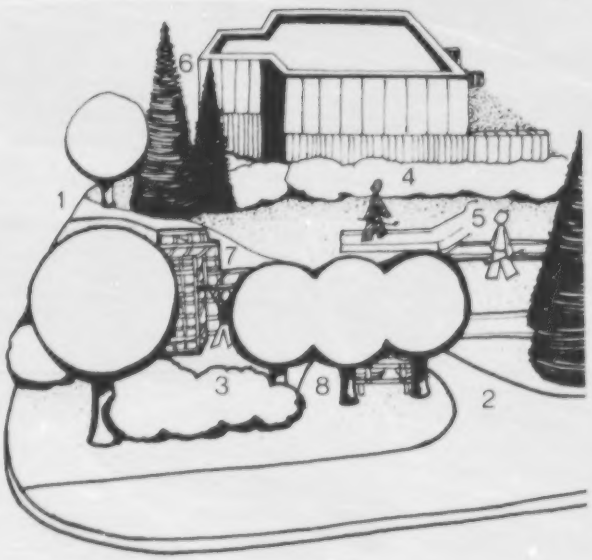


Legend

1. Unit buffer
2. Property-line fence
3. Tetherball
4. Table games
5. Ping-pong
6. Wind protection



Legend

1. Entrance
2. Pathway system
3. Plant buffers
4. Buffer to units
5. Miniature golf
6. Noise and visual buffer
7. Climbing structure
8. Benches

Construction Cost Estimates

	$
• Tetherball facility	200
• Ping-pong table with fence for wind protection	400
• Climbing structure (approx. 4000 x 2000 x 3000 mm high)	1500
• Miniature golf facility (3 holes)	1000
• Plant buffer to units	400
• Plant buffer to play area	300
• Eight trees @ $100 per tree	800
• Six benches @ $150 each	900
• One games table	200
• Pathway system (15 m^2 approx.)	300
TOTAL	6000
• Play space for preschoolers. Total (approx.)	2000

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2) Medium-Scale Development

Statistics

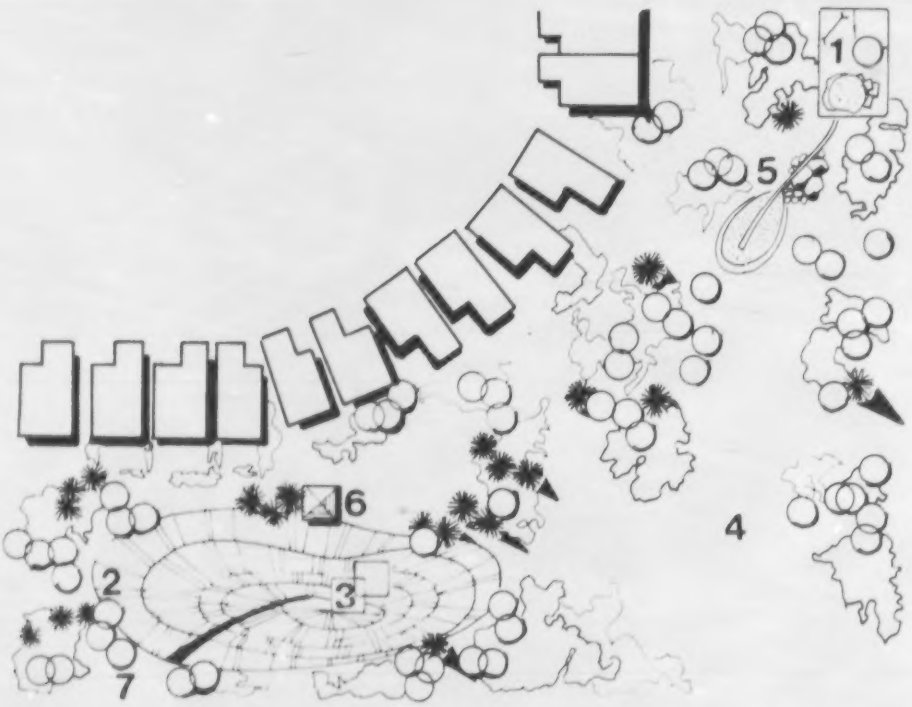
Area: 3.14 hectares
No. of Units: 81
Density: 26 units per hectare

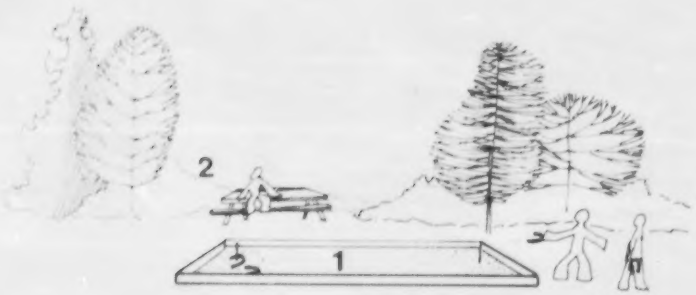
Legend

1. Preschool play space
2. Horseshoe pit
3. Tables
4. Hill
5. Climbing frame
6. Open space
7. Play stream

Legend

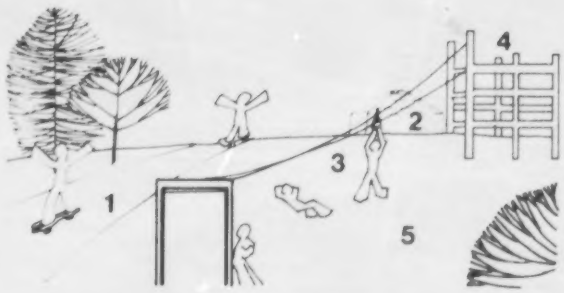
1. Preschool play spaces
2. Hill
3. Climbing frame
4. Open space
5. Play stream
6. Playhouse
7. Asphalt path for skateboarding





Legend

1. Horseshoe pit
2. Tables



Legend

1. Asphalt path for skateboarding or go-cart racing
2. Playhouse
3. Pulley glide
4. Climbing frame
5. Mound, 3 m high

Construction Cost Estimates

	$
• Horseshoe pit	100
• Six tables @ $150 each	900
• Play mound (approx. 60 x 20 x 3 m) using surplus material excavated from construction site	2 500
• Climbing structure (approx. 2000 x 2000 x 3000 m) including pulley glide	1 000
• Open space (no cost included)	—
• Play stream (approx. 10 m long)	600
• Allowance for non-recirculating water supply and drainage system to play stream including service connections	500
• Playhouse ('A' frame type, 1800 mm high)	400
• Pathway system (approx. 80 m^2)	1 700
• Twenty deciduous trees @ $100 per tree	2 000
• Ten evergreen trees @ $75 per tree	750
TOTAL	10 450

3) Large-Scale Development

Statistics

Area: 5.03 hectares
No. of Units: 302
Density: 60 units per hectare

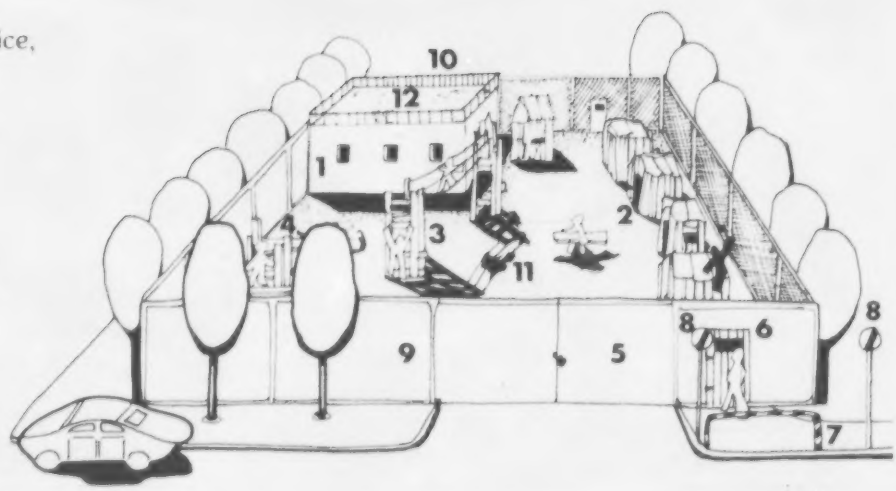
Legend

1. Preschool play space
2. Play stream 20-m long
3. Mound with asphalt path
4. Open space
5. Paved surface play area
6. Natural environment play area
7. Adventure playground

Adventure Playground

Legend

1. Indoor playroom, leader's office, bathrooms
2. Child-made huts
3. Leader- and child-made play structure
4. Wood, scrap pile
5. Truck gate
6. "People" gate
7. Curb barrier
8. No parking near people gate
9. Solid fence on street side
10. Chain-link fence on natural area side
11. Open space
12. Roof deck access by outside ladder only

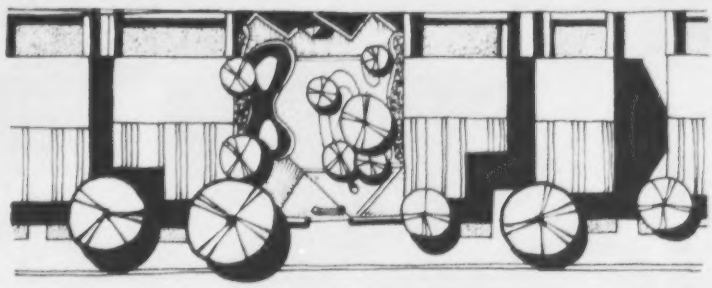


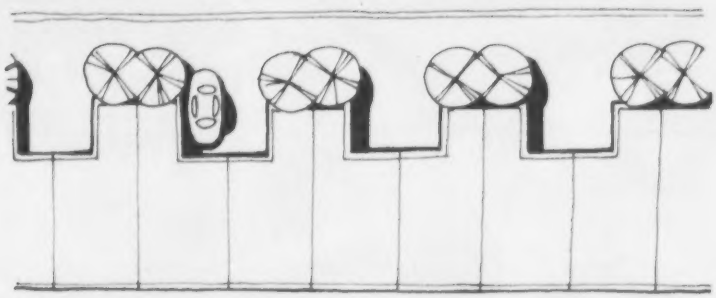
Construction Cost Estimates

	$	$
• Play stream (approx. 20 m long)		1 200
• Allowance for non-recirculating water supply and drainage system to play stream including service connections		750
• Play mound (approx. 30 x 30 x 4 m) using surplus excavated material from construction site		1 800
• Pulley glide		300
• Asphalt path		200
• Open space (no cost included)		—
• Hard-surface rink/play area (approx. 20 x 7.5 m or 150 m²) including granular base, berm surround, 500 x 2000 mm		1 600
• Allowance for drainage system to rink/play area		500
	TOTAL	6 350
• Natural environment play area (no cost included)		
• Adventure playground (approx. 35 x 40 m or 1400 m²) comprising:		
— Play hut, 8000 x 12 000 x 3000 mm (portable type with bathroom, office and storage facilities, heating, lighting and telephone installations and reinforced roof deck)	25 000	
— Allowance for drainage system and service connections to play hut	5 000	
— Wood perimeter fencing (75 x 3 m) including single door 1000 mm wide	2 300	
— Pair of wooden gates (4 x 3 m)	500	
— Chain-link perimeter fencing (71 x 3 m) including gate 2000 mm wide	1 800	
— Twenty trees @ $75 per tree	1 500	
— Metal safety barrier	150	
Total for adventure playground	36 250	36 250
Total for large-scale development		42 600

4) Existing Neighbourhood

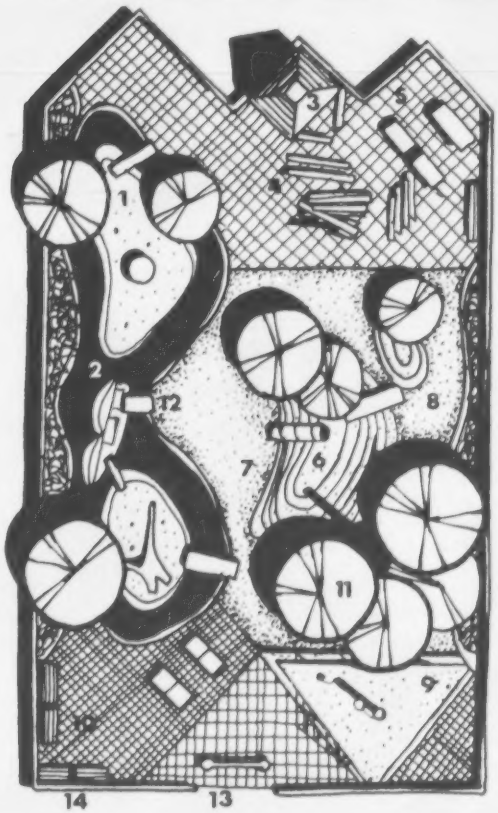
Vacant lot on residential street in old neighbourhood.

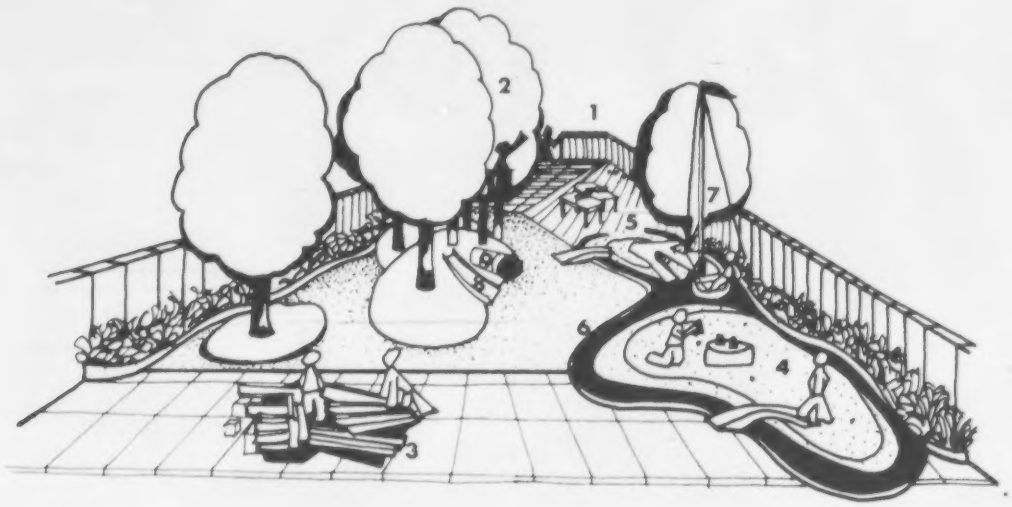




Legend

1. Sand islands
2. Play stream 80 mm deep
3. Storage
4. Blocks and boards
5. Carpentry benches
6. Mound
7. Tunnel slide
8. Sliding mound
9. Tetherball
10. Ping-pong
11. Treehouse
12. Flat-bottom boat
13. Entrance with ground rail to prevent entry of motorcycles
14. Seating





Legend

1. Entrance
2. Tree house
3. Loose material
4. Sand island with cake table
5. Ping-pong
6. Stream 80 mm deep
7. Boat
8. Slide down mound
9. Tunnel slide

Construction Cost Estimates

The play area shown is approximately 18 x 36 m or 650 m² and is enclosed by wood fencing 2000 mm high.

	$
• Entrance (no gates, metal safety barrier only)	180
• Treehouse (approx. 1500 x 1500 mm)	200
• Loose play material	200
• Play stream (approx. 60 m total length) including two sand islands	4 000
• Allowance for recirculating water supply and drainage system to play stream including service connections	1 000
• Play boat (fixed in position)	400
• Two miniature bridges	150
• Play mound (approx. 10 x 6 x 1.5 m) using imported earth	350
• One slide (open type)	200
• One slide (plastic tunnel type)	200
• Two ping-pong tables	400
• One storage hut (approx. 1000 x 2000 x 2000 mm)	450
• Two heavy-duty work benches @ $225 each	450
• Three benches @ $200 each	600
• Tetherball facility	250
• "Lockstone" or similar paving (approx. 60 m²)	1 800
• Precast concrete paving (approx. 200 m²)	4 300
• Grassed areas (approx. 200 m²)	400
• Topsoil areas for planting (approx. 40 m²) including timber edging	250
*• Wood perimeter fencing (120 x 2 m)	2 700
• Ten trees @ $100 per tree	1 000
• Shrubs	750
TOTAL	20 230

*Perhaps not necessary, depending on the site.

We may not be angels but we can make them!

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Management, Resident Participation and Maintenance

Management and Resident Participation

Issues

- Trends in Canada indicate that municipalities will not be able to cope with the tremendous demands on their resources. The need for participation, voluntary involvement, cooperation and decentralized authority applies in the recreation field more than anywhere else.

- One of the problems in planning play opportunities is that young children do not respect property. They are not naturally tidy and they often vandalize the very equipment that was put there for their enjoyment.

- However, children in the upper half of the age bracket are quite capable of making a significant contribution to planning and managing their environment if adults seek and respect their opinions. They also can exert a kind of peer discipline that minimizes vandalism. However, they are seldom consulted in adult decision-making with the result that they have a tendency to opt out of accepting responsibility. But children are the greatest users of open space and their input and co-operation is invaluable for the effective use and maintenance of communal spaces.

- In a new housing project, the issue of whether children's play facilities should be installed before the tenants move in — before there is a constituency to consult — has been much debated.

  — In Scandinavia the play facilities are all in place and completed before the tenants move in. This is based on the premise that the sense of pride arising from belonging to a well-planned community, will lead to a cooperative effort to maintain and improve it in the long term.

  — When play facilities are parachuted into a community without previous consultation or planning, the adults, as well as the children, take on a "we-they" attitude, blaming the authority ("they") for unimaginative facilities and poor maintenance while assuming that the residents ("we") have no responsibility.

- Experience has shown that if only the space for play is set aside, several difficulties arise.

  — Choice of the play site is made arbitrarily, not based on its appropriateness for a specific

activity or group of activities. Therefore the space is often inappropriate for all of them.

— Residents who choose houses bordering an open, undesignated space often fight to have it left purely ornamental. Children are not consulted and are not accustomed to organizing to fight for their right to have space developed for play.

— The sales pitch of offering a better-equipped family housing project that takes into consideration the needs of children is meaningless if there is no evidence of play spaces, only promises.

Performance Criteria

- An organizational structure should be set up that will facilitate participation and involvement of children and their parents in planning and management.
- A mechanism should be created for on-going participation, not just in the planning stage, but for long-term maintenance and management.
- A method must be found to ensure that a sense of shared responsibility exists for the child's right to play and an awareness that over one-third of Canada's population consists of children under 14, and that, therefore, at least one-third of the communal space should be designed to meet their needs. A community that is good for children is good for everyone.

Suggested Action

- To maintain and manage play spaces some sort of organization is needed. The type of tenure will determine the organizational structure.

— **A cooperative housing project** has a built in philosophical component that makes forming a play committee relatively simple. Usually members of the cooperative participate in the early stages of planning and have input into the design of play opportunities. The participation of children on the play committee will help spread responsibility.

— **Condominiums** usually have an active homeowners' committee. A sub-committee on play should be set up at the outset with children represented on it to ensure that play is given the same priority as adult issues such as garbage pick-up and snow removal.

— **Tenants in rented accommodation** are often reluctant to organize because they view their accommodation as temporary. In many instances, they are discouraged from organizing by the landlord. However, landlords who do encourage tenant committees find that self-help and cooperative effort cut down on vandalism and discontent. Charging a small recreation fee each month which the tenants control is a way to encourage cooperation. The outcome can be a children's play committee. Children may want to form their own committee (with a little help from an adult to get started) and then send representatives to an adult committee.

— **A freehold community** is often more difficult to organize, so perhaps a homeowners' association can be set up to serve the purpose. With densities increasing, homeowners often must share communal land at very close quarters. If the land is badly planned or maintained, everyone will be affected. If the communal land is owned by the municipal recreation department, the level of maintenance and management may not be very high. Again, a recreation fee paid into a homeowners' association can be very effective in maintaining interest and a sense of responsibility for the communal space within or adjoining a freehold project. Friendships made by parents through their children are one of the advantages of a homogeneous community. Working together for and with the children is an effective way of bonding a community.

— **Community associations** have sprung up all over Canada and are growing constantly in effectiveness. Many started when residents banded together to fight against a threat (a highway, a highrise, etc.) and have stayed together to fight *for* another cause; a very meaningful cause can be the improvement of the neighbourhood for children.

- The following are some basic functions of the organization for the planning and management of play spaces:

— **Committee Formation**

A committee of volunteers from among the residents of the community (both adults and children) should be organized to plan for the development and

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management of play spaces within the community. The management of a new development may encourage committee formation to gain community input and support.

In existing neighbourhoods, the municipal recreation department often initiates the formation of a play committee within the community association. Municipalities have found from experience that community input is valuable and saves them money in the long run.

— **Permanent Committee**

It is important for the community associations, or any play committee, to realize that anything concerned with children should be on-going. The child population changes, grows older and is replaced. With this change, play needs change, so new members are added to the committee while others drop out. If the committee structure stays in place it prevents wasted time in reconstituting it each time there is an issue to discuss or improvements are necessary.

— **Play Committee Representation**

The play committee should consist of community representatives. Children should be included. If there is a housing manager on the project he or she should be included on the committee. If a recreational authority is responsible then a representative should be invited.

The school principal is a good person to add to the play committee in existing neighbourhoods, as the use of school property can complement neighbourhood facilities and play spaces.

The composition of a community adventure playground management committee would be the same as that for community associations, with the addition of representatives from social agencies. Representatives from the police and fire departments are also helpful. Getting their cooperation and expertise at the outset helps the image of the new, unfamiliar concept of an adventure playground and gets the playground established in the community.

Child Participation

Asking children to participate in the adult activity of holding meetings can often be a disaster or tokenism at best. Someone skilled with children should meet informally with the children as a group and help them to decide on the kind of input they want. A children's play committee could be formed and children could either send a representative, or attend the meeting as a group to present their case. A system must be set up to report back to them.

Committee Action Plan

The first project of a committee in new housing is to study children's play by reading publications on the subject and looking at pictures of alternative opportunities. One of the greatest errors made is the perpetuation of poor solutions. A coat of paint will not make the equipment more playable or attractive to the youngsters.

In existing communities, evaluation of play spaces by the community association is an important first step. To plan for improved opportunities for children's play, the community association must have information on the amount of space available, the number of children actually using the present play spaces, the frequency of such use and the equipment used. Such fact-finding activity must be followed by an assessment of need and a thorough study of alternatives.

The committee action plan would include a program for the education of the neighbourhood on the objectives of the play activities planned.

If an adventure playground is planned, very careful community preparation is necessary because of the newness of the concept. Community support is essential to the success of an adventure playground. (See "Design Details, Adventure Playgrounds".)

Community Services

The provision and use of loose material for a playground can be accomplished by a voluntary committee. Designs for making unit blocks, saw horses, etc., are found in the *Creative Playground Information Kit 1*, NHA 5104.

The Committee could solicit local merchants, construction companies and residents for donations of supplies and services.

An adventure playground management committee would share responsibility with the leader for the collection of and negotiation for the on-going supplies of scrap material and community discards for children's hut building.

Committee Responsibilities

The committee can delegate responsibility to a group of residents or the management representative. For example, neighbours close to the playground can take turns being responsible for the keys to the storage cupboard in a creative playground. Management could take responsibility for periodic maintenance of the vegetation (fertilizing, pruning, etc.).

Maintenance

Issues

- Maintenance time and expenditure are usually underestimated, resulting in deterioration of play spaces.
- A maintenance program is usually not developed in the planning stage, and if developed, is often not adhered to.
- Resident and child participation are not planned for, though they are essential to foster a sense of responsibility for the play space and minimize maintenance costs.

Performance Criteria

- The maintenance program should be planned when the design for the play space is developed.
- The maintenance program should be continuous to prevent deterioration which could result in higher costs to upgrade the facilities later.
- The maintenance program should involve adult and child residents as well as management to be effective.

Suggested Action

- With trends as they are today, with less and less money and higher and higher costs, self-help and voluntary action are the only solutions. The mechanism for action by future residents should be built right into the design of new medium to high-density housing projects. In other words, it should be built into the purchase or lease agreement.
- The provision of an adequate number of refuse containers and a system for emptying them is important. Children can be recruited to do this if they are part of the

committee that gives the assignment. The design of the refuse containers can be attractive and fit into the site landscape and with other street furniture.

- Storage facilities for loose material and maintenance tools must be provided to eliminate clutter.
- A wooden rake stored near the sand area will encourage raking, especially if the garbage container is close by.
- Some arrangement must be made for large equipment such as lawn mowers and snow blowers when needed.
- Group clean-ups and periodic inspections of the play areas can be organized with the children and end in a festival, wiener roast, etc., that takes the drudgery out of it.
- A maintenance program should be set up and adhered to. The schedule can be developed for a year and should include:
  - Watering, fertilizing, pruning, pest control and winter protection of vegetation
  - Mowing and snow removal
  - Litter removal and garbage pick-up
  - Inspections for wear and tear and minor repair.
- A long-term maintenance program should be developed for the play space to accommodate painting, repair, replacement of play facilities and upgrading or change of use.

Summary

Key Considerations in the Design of Family Housing to Meet the Needs of School-Age Children follow:

The Importance of Play

Provision must be made for a variety of play experiences that will enable children to develop their full potential as they grow to adulthood.

Children's Use of Outdoor Space

- Children, especially those of school-age, are the greatest users of the outdoor environment in the residential community. Their interests and needs, therefore, should have high priority.

Child Density

- Child density increases in proportion to unit density. Even with generous outdoor private space, children are living in close proximity to one another. There are more of them on a block or in a housing cluster than in single-family housing. At higher housing densities none of them will have a backyard big enough to accommodate "the school-age gang".

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- School-age children are often thoughtless about other people's private spaces unless they are very clearly defined; respect for privacy is acquired. Sociability, exploration, experimentation, whooping it up with friends, are to be expected and must be accommodated in project design.

Planning Communal Space

- When housing is provided in densities above 20 to 25 units per hectare, communal space planning becomes crucial in new developments. Communal space cannot be just land left-over after accommodating the maximum number of dwelling units on the site, or just serve as visual relief for adult eyes. It must function for everyone in family housing — adults and children of all ages.

- In existing communities, parks, playgrounds and school grounds should be assessed for their real play value. Are they being used? If not, why not? Existing play areas may need to be replanned to close the gap between the real play needs and the opportunities provided. If land has not been designated for play in the neighbourhood, the key is to determine what land can be recycled, made available, made safe and truly usable for this age group.

Other User Group Interests

- Conflicts or incompatibilities among the needs and interests of different age groups must be recognized. Even in purely family housing developments, one cannot design for just one group, such as school-age children, and ignore all the others. To increase enjoyment for all age groups, facilities must be planned to minimize the conflicts between ages and interests and maximize interaction and respect for others. In design terms, location, access and suitability of a space for a specific activity must be carefully planned. A basketball net cannot be put in a preschool play space, nor a softball diamond too close to unit windows.

Family Lifestyles

- Family lifestyles should be considered when selecting the types of opportunities for play that are needed. One should take into account whether or not both parents work, if there is a significant percentage of single-parent families, if the families do or do not go to cottages in summer and if children are sent to summer camp.

- Allowance also should be made for the income and ethnic differences that dictate distinctive child-rearing practices. Example: in an inner-city,

low-income area, where access to the countryside is restricted because of costs and time, the opportunity for summer water activities and winter sliding may have to be re-created in the urban environment.

Parents' Role

- When planning family housing planners should ensure that the residential area is a good place to bring up children. Child-rearing is an art: it can be rewarding, interesting and fun. It is also a major responsibility, which can be frustrating, difficult and a down-right nuisance at times. We should design family housing projects which facilitate the child-rearing process. The built environment should attempt to make the experience as positive as possible. In design terms it means providing an environment that is safe, easy to supervise and conducive to making friends; an environment that elicits positive, creative behaviour on the part of the child and that provides opportunities for the whole family to play and interact together; an environment that will serve to support good parenting and the rights of children.

Existing Neighbourhood Facilities

- Play facilities and family recreation should augment existing neighbourhood facilities, not duplicate them. As long as there are spaces for informal spontaneous activities close to home, school-age children will go some distance to use hockey rinks much as they do to use playgrounds with a leader, such as adventure playgrounds.

Climate and Topography

- Climate and topography must be taken into consideration. Rainy climates will require different design solutions from areas where winters are long and cold. Advantage should be taken of the topography.

Hierarchy of Play Spaces

- There is a hierarchy of play spaces; children's play is a gradual integration into the community; children should be able to grow into their community at their own pace. They should be able to play on their own doorstep safely and their door should be at ground level.

- Young children graduate to play spaces close to home, which can be supervised by adults from their unit and from which they can run home and get reassurance.

- The radius of a child's activities expands as his self-reliance develops. The school-age child still likes to play

in his own immediate neighbourhood, spontaneously, informally, going further afield for organized sports or leader-led activities. Sooner or later he will be an integral part of his environment, participating without anxiety, providing the community is on a manageable human scale.

Resident Participation

- Resident (children included) participation in the design, management and maintenance of play opportunities is essential. Wherever possible they should be involved from the outset and there should be a built-in mechanism to keep them involved on an on-going basis. Children's participation is crucial to ensure that they share in the responsibility and that the design is relevant.

CMHC Resource Material and Additional References

Publications Available on Request from CMHC Offices

NHA 5104	CEAS.	*Creative Playground Information Kit 1*. Ottawa: CMHC, 1978.
NHA 5105	CEAS.	*Adventure Playground Information Kit 2*. Ottawa: CMHC, 1977.
NHA 5106	Hill, Polly.	*An Overview of the Needs of Children and Youth in the Urban Community*. Ottawa: CMHC, 1977.
NHA 5112	Hill, Polly.	"Children's Play in Public Housing Projects". Ottawa: CMHC, *Living Places*, Vol. 10, No. 1, 1974.
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NHA 5210	CEAS.	*List of Resource Material available from CMHC National Office*. Ottawa: CMHC, 1978.
NHA 5211	CEAS.	*List of Resource Material available from CMHC Regional and/or Provincial Offices*. Ottawa: CMHC, 1978.

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Books and audio-visual material available from CMHC Regional and/or Provincial Offices:

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Bengtsson, Arvid. *Adventure Playgrounds*. London, England: Crosby, Lockwood and Sons Ltd., 1972. English

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Ellison, Gail. *Play Structures*. Pasadena, California: Pacific Oaks College and Children's School, 1974. (714 West California Boulevard). English

Hogan, Paul. *Playgrounds for Free*. Cambridge, Mass.: MIT Press, 1974. English

Rouard, Marguerite and Simon, Jacques. *Children's Play Spaces*. Woodstock, N.Y.: The Overlook Press, 1977. English

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Pamphlets:

Handicapped Adventure Playground Association. *Adventure Playgrounds for Handicapped Children*. London, England: Handicapped Adventure Playground Association, 1973. (2 Paultons Street, London SW3). English

Hill, Polly. "Children and Space". Ottawa: CMHC, *Habitat*, 1972. English

Slides:

Our Children's Environments
Produced by CEAS

Planning Play Spaces for Young Children
Produced by CEAS

A Creative Playground — What's That?
Produced by CEAS

An Adventure Playground — What's That?
Produced by CEAS

Films:

Where Can City Kids Find Adventure?
5 minutes, colour, 16 mm.
English
French

Books and audio-visual material available on loan from National Office.
Contact Children's Environments Advisory Service
National Office, Montreal Road, Ottawa, Ontario, K1A 0P7.

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Glossary

1. **Adventure Playground**

   A place where children of all ages, under friendly supervision, are free to do many things they can no longer easily do in our crowded urban society: building — huts, walls, forts, dens, treehouses; lighting fires and cooking; tree-climbing, digging, camping; perhaps gardening and keeping animals; as well as playing team and group games, painting, dressing up, modelling, reading or doing nothing. It must also be a place where children just meet and talk in a free, relaxed atmosphere.

2. **Buffer**

   Separation device between two incompatible land uses which serves as a barrier for both vision and sound. It can be a berm, a strip of land, trees, a fence or hedge.

3. **Communal Open Space**

   Open space allocated for the communal activities of the residents, both adults and children, such as outdoor areas for play and sports and for passive use (sitting, viewing).

4. **Comprehensive Playground**

   Where play from all seven categories (see text) are provided for in one space, approximately 1000 m^2 in area.

5. Comprehensively Planned Development

Housing built by means of a development process in which the location and design of the individual dwelling units is an integral part of the planning and design of the project site, including vehicular and pedestrian circulation systems, services, play spaces, open spaces and landscaping.

6. Creative Playground

A play space designed by adults for children to nurture the child's total development — his physical, social, creative and intellectual growth. Compatible activities can adjoin each other while incompatible activities are separated by a buffer.

7. Development Size

Small residential development: A residential development of fewer than 50 units, usually using communal facilities in adjoining areas as well as containing some of its own.

Medium residential development: A residential development of 50-100 units, fairly self-contained in terms of communal facilities.

Large residential development: A residential development of over 100 units, self-contained in terms of communal facilities available to its residents.

8. Family Units

To best satisfy the requirements of families with children, family units in a development should have the following characteristics:

- Housing unit containing two or more bedrooms
- Ground-oriented dwelling unit
- Access to and parking for car
- Traffic separation between motor and pedestrian routes
- Privacy, both visual and auditory
- Individual and community amenity areas including play spaces and spaces for spontaneous play.

9. **Medium Density Housing**

A residential development with a gross density of 25-50 units per hectare.

10. **Play Leader/Play Worker**

A trained organizer and supervisor of recreation in general or specialized in working with children. The play leader is often responsible for a particular children's playground or play centre and is an integral part of every adventure playground.

11. **Play Space**

An area within a neighbourhood or community developed *exclusively* for children's play.

12. **Site Landscape**

Overall site integration of design, layout, grading, man-made materials and vegetation.

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